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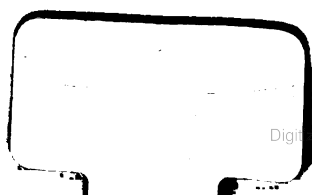
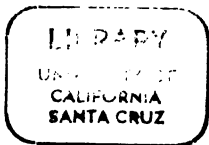
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HORSE PARADE, CALIFORNIA STATE FAIR, 1909.

REPORT

OF THE

CALIFORNIA

STATE AGRICULTURAL

SOCIETY

FOR THE YEAR 1910



SACRAMENTO:

W. W. SHANNON : : : SUPERINTENDENT STATE PRINTING

1911

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5 39 A2 1910 CONTENTS. ---

	PAGE.
CEREAL CROP OF CALIFORNIA, 1910. By T. C. FRIEDLANDER.....	15
CALIFORNIA FRESH FRUIT. By F. B. McKEVITT.....	18
THE CALIFORNIA ALMOND GROWERS' EXCHANGE. By J. P. DARGITZ....	24
THE CALIFORNIA RAISIN INDUSTRY. By GEORGE ROBERTSON.....	28
COUNTRY LIFE. By W. A. BEARD.....	35
SQUIRREL ERADICATION. By RUPERT BLUE.....	39
AGRICULTURAL EDUCATION IN THE COMMON SCHOOLS. By EDWARD HYATT	41
IRRIGATION THE BASIS AND THE MEASURE OF THE PRESENT AGRI- CULTURAL GROWTH OF CALIFORNIA. By FRANK ADAMS.....	44
AGRICULTURE IN CALIFORNIA.....	51
ALFALFA GROWING IN CALIFORNIA. By REV. D. EDMISTON.....	52
ESTIMATING ALFALFA HAY IN STACK.....	57

RESOURCES OF THE STATE OF CALIFORNIA (by counties).

	PAGE.		PAGE.
ALAMEDA COUNTY	61	PLACER COUNTY	132
ALPINE COUNTY	65	RIVERSIDE COUNTY	136
AMADOR COUNTY	66	SACRAMENTO COUNTY	139
BUTTE COUNTY	70	SAN BENITO COUNTY.....	145
COLUSA COUNTY	73	SAN BERNARDINO COUNTY.....	147
CONTRA COSTA COUNTY.....	75	SAN DIEGO COUNTY.....	151
DEL NORTE COUNTY.....	78	SAN FRANCISCO COUNTY.....	156
EL DORADO COUNTY.....	79	SAN JOAQUIN COUNTY.....	157
FRESNO COUNTY	81	SAN MATEO COUNTY.....	160
GLENN COUNTY	88	SANTA BARBARA COUNTY.....	162
HUMBOLDT COUNTY	93	SANTA CLARA COUNTY.....	164
IMPERIAL COUNTY	96	SANTA CRUZ COUNTY.....	167
KERN COUNTY	98	SHASTA COUNTY	172
LAKE COUNTY	101	SIERRA COUNTY	177
LASSEN COUNTY	104	SISKIYOU COUNTY	179
LOS ANGELES COUNTY.....	106	SOLANO COUNTY	182
MADERA COUNTY	111	STANISLAUS COUNTY	185
MERCED COUNTY	113	SUTTER COUNTY	187
MODOC COUNTY	117	TEHAMA COUNTY	189
MONO COUNTY	119	TRINITY COUNTY	194
MONTEREY COUNTY	121	VENTURA COUNTY	197
NAPA COUNTY	125	YOLO COUNTY	200
NEVADA COUNTY	127	YUBA COUNTY	204
ORANGE COUNTY	130		

REPORT

OF THE

STATE AGRICULTURAL SOCIETY.

To His Excellency, HIRAM W. JOHNSON,
Governor of the State of California.

SIR: We have the honor to submit herewith, for your consideration, the Fifty-Seventh Annual Report of the State Agricultural Society.

Besides a statement showing the receipts and expenditures of the society for the past year, we include herein the statistical reports of such counties as have complied with the law by sending in returns, and also some articles on Agriculture and kindred subjects by gentlemen especially qualified to treat the questions considered.

REGARDING STATISTICS.

In spite of the best efforts we can exert, some of the counties continue to ignore the statute which makes it their duty to supply this society, on or before a certain date each year, with statistics of their products. If supervisors could know how much these reports are sought after by students of California and prospective immigrants to the State, and how much publicity the counties that do report receive as a reward for their efforts, we believe the situation would be different. But they do not know this, and, not realizing the benefit, they see only the cost and act on the belief, apparently, that they are favoring their county by saving the hundred dollars or so that would be necessary to secure the report which the law directs. How they can harmonize their oaths to support the Constitution and laws of the State in the face of a deliberate disregard of this particular statute is for them to explain.

As the matter of full and reliable state statistics is of very great importance, and as California is behind most of the other states in the completeness of its industrial data, we are disposed, by way of emphasizing the importance of the subject, to repeat the recommendations made a year ago, which were in effect that to repeal the law and abandon the attempt to collect industrial statistics would be to go backwards, to put California behind the less progressive states. Since this can not be thought of, the thing to do is to so amend the law as to make it effective. Several measures might be suggested to this end, but we believe the simplest and easiest thing to do would be to make county assessors ex officio county statisticians, require of them a house to house canvass in making assessments and collecting statistical data, increase their compensation according to the increased work, and provide a penalty, first, for the

producer or manufacturer who declines to give the desired information; and second, for the official or officials who neglect in any way to carry out the provisions of the law. We suggest imposing this extra duty on the assessors because they are supposed to be better informed regarding values and industrial conditions in their respective counties than other citizens, and because, further, they are already required to collect certain data, and they might as well make one job of it and do the work complete. This is substantially the Kansas law on the subject, and there it works very satisfactorily.

Another effective remedy would be to add to the present law a provision that where county supervisors neglect or refuse to appoint a statistician on or before a certain date, say August 1st of each year, it shall become the duty of the State Agricultural Society to appoint a citizen of the defaulting county to collect the statistics of said county at the expense of said county, and in the event the supervisors refuse to allow such claim, then authorize the State Treasurer to pay the same and deduct the amount thereof from any money due or that may become due from the State to said county from any source.

We know you will agree with us when we say that if this statistical work is to be continued it ought to be so complete as to be of maximum value and a credit to the State, and we ask your valued assistance in helping to bring about such amendments to the present law on the subject as will insure such results.

A BRIEF RETROSPECT.

In 1906, after a spirited contest among the directors, pool selling and book making on the fair grounds were abolished, and the selling of spirituous drinks prohibited. This action on the part of the directors and a simultaneous change of management seemed to mark the turning point for the better. In spite of many obstacles and many discouraging conditions, chief of which was the San Francisco disaster, the fair that year was an improvement on the one of the year before, and each fair held by the society since has been better than the preceding one. This is significant in view of the fact that when the reforms referred to were inaugurated all kinds of dire consequences were predicted. The abolished privileges had been bringing the society twenty or more thousand dollars a year, and it was contended that without this revenue the society could not live. But it did live, and remarkable as it may seem, the deficiency the first year under the reform was not so great as the average deficiency of previous fairs. The touts and sports were not so much in evidence among the visitors, but in their place came farmers, merchants, and other substantial men of affairs with their families, giving the institution a higher and more dignified cast, which recommended itself strongly to the better element of our population. The reform was so radical, so thorough and so effectively enforced as to convince the doubting that the management was in earnest, and at once encouragement began to be received from the press and other influential sources that previously had been opposed to the society, or indifferent as to its welfare. To be sure the management worked hard and under adverse conditions to vindicate its course, but that it stands vindicated to-day must be admitted by all fair critics.

The exhibits each year, by persistent effort, have been better and more representative of our great State and its various resources than the year before, and in time—and not a long time—we hope to hold a fair that will represent not only every product, but every section of this most fruitful of American commonwealths. When that day comes the California State Fair will be in itself a complete exposition of western resources, so comprehensive in the variety of its displays as to attract visitors from all sections of the country who desire to study the possibilities of this rich region of America from convincing living objects.

THE VALUE OF FAIRS.

Fairs are mileposts of progress; they are educators, and they give stimulus to greater endeavor along agricultural, mechanical, and other industrial lines. They are for all the people; they represent all classes, occupations, and conditions of life; they unite city and country and wipe out all class distinction; and they give an uplift to rural life and inspire progress in every branch of honest activity. That they should be encouraged goes without saying, but the maximum benefit can only be realized from a fair that comprehends all it professes to show. In other words, a state fair that represents in its exhibits only part of the state and part of its resources may be worth all it costs, but nevertheless it falls short of its purpose. The management of the California State Agricultural Society realizes this and has spared no effort within its means to extend the influence of the society to the remotest corners of California and draw exhibits to the annual fairs from every quarter and every industry. In this effort they have been successful to a degree that has overcrowded their accommodations.

NEED OF BETTER EQUIPMENT.

The past two years tents and other temporary structures have had to be provided to accommodate the overflow. This last year two temporary grand stands, two temporary live stock barns and two temporary exhibition buildings were erected at considerable expense, and yet we did not have grand stand room enough, nor stalls enough, nor display room enough to meet the demands. This is an unfortunate condition for two reasons: first, the cost of these structures cuts largely into the revenue; and second, visitors and exhibitors who have to accept temporary accommodations feel that they are discriminated against and abate their enthusiasm for the institution, thus causing the society to lose in one direction what it may have gained in another, and rendering the work of promoting the next fair just that much more difficult. To remedy this situation, the society needs a new and larger grand stand, a coliseum or live stock amphitheater, more live stock barns and more exhibition buildings. It feels that the State ought to supply these. It also thinks the State ought to provide a reasonable sum for better fire protection and the planting and care of the Agricultural Park. With proper equipment, of which this society is sadly lacking, compared with that of most other states, the annual fairs in California might be made not only the best, but the most instructive in America, for the reason that our range of products comprehends a greater variety than can be brought together from any similar area of the continent.

THE SOCIETY IMPROVING.

In strength and prestige the society shows continued improvement. With its holdings and attractions now in one enclosure, a change that should have been made many years ago, with proper encouragement and better equipment we are hoping for greater advancement in the future than in the recent past.

The last fair, the fair of 1910, as we have said, was not only an improvement on the fairs of the previous years, but was by far the biggest and best we have ever had. This was due largely to the enterprise of the citizens of Sacramento, the capital of California and the state fair city. They believed in what has become an accepted fact with all experienced fair managers, that more and better side attractions would give impetus to every department of the exposition. They knew, however, that our financial condition justified the directors in conservative action regarding the expenditure of money for such attractions, and through an organization created for the purpose they raised a large sum of money and agreed to become responsible for the expenses of certain attractions, and to take in return all money received at the fair over and above a specified amount. This amount, however, which it was agreed should first go to the society, was in excess of the revenue from the best past year.

Under this arrangement some of the best attractions to be had on the American continent were brought to California, and the result was an attendance more than double the attendance of the previous year, while the fair proper was proportionately greater and better. Producers, manufacturers, and breeders, realizing that the big attractions were going to bring big crowds, exhibited in larger numbers than ever before, pressing our capacity to the limit and compelling us, in spite of the temporary quarters referred to in some departments, to reject exhibits for the want of a place to put them.

Altogether, it was the fair of fairs in California, and while the citizens' committee fell a little short in their proportion of the receipts of the amount they had guaranteed, yet the society did well and the citizens made up their deficiency with alacrity, declaring that the big crowds brought to Sacramento and the incidental expenditures among the citizens and business houses paid them many fold the cost. Indeed, so well pleased were the people generally with the outcome that by practically unanimous request the citizens' committee has been kept intact for the purpose of coöperating with the society on similar lines in the fair of 1911, and we are all confident that with the experience gained this year we will be able another year, crop and industrial conditions being favorable, to hold a still bigger and better fair, and without leaving any deficiencies for the citizens or anybody else to meet.

In brief, it has been amply demonstrated that good attractions pay, and while the state fair officials know and admit that the organization is not created primarily for the amusement of the people, yet, in order to get the people together where they may profit by the educational and stimulating character of a great industrial display, there must be something to amuse as well as instruct. After all, men and women are only grown up boys and girls, and while they are anxious to learn and

improve by what they can see at a big exposition of industrial and live stock resources, yet they take the educational part with better relish and pay the admission fee with a freer hand when they realize they are going to be entertained and amused as well as instructed.

AGRICULTURE THE BASE OF OUR WEALTH.

California has various rich resources, such as mining, lumbering, manufacturing and commerce, yet to-day agriculture and its allied industries produce the big end of the State's wealth. Agriculture, in a great measure, sustains all other industries; upon it the varied commercial, business and professional interests of the State depend. When the farmer is prosperous all are prosperous; therefore, those who work the soil should have all the help that just laws and popular encouragement can give them, and no stimulus has proven greater to this branch of industry than a well conducted and well patronized agricultural fair.

The Federal Government yearly gives more and more attention to agriculture, and is justly proud of the result of this branch of its work. Secretary Wilson, head of the Agricultural Department of the United States, in his latest report says that "Nothing short of omniscience can grasp the value of the farm products of this last year. At no time in the world's history," he continues, "has a country produced farm products within one year with a value of the agricultural products of this country for 1910. The value of farm products from 1899 to the present year has been progressive without interruption. If the value of the products of 1899 is placed at 100, the value for this year is 189, or almost double the value for the census year eleven years ago. During this period of unexampled agricultural production, a period of twelve years, during which the farmers of this country have steadily advanced in prosperity and wealth and in economic independence, in intelligence, and a knowledge of agriculture, the total value of farm products is \$79,000,000,000.00."

Of this stupendous wealth from the farms of the United States, California has produced her full share and has kept pace with the rapid increase of production in the country at large. This last year crops of all kinds in this State were good, and prices on the whole were a little more than an average, more particularly as applies to cereals, meats, dairy and poultry products. Of the unprecedented agricultural output of the United States for 1910, California contributed, including her fruits and vegetables, her cereals, live stock, dairy products, hay, poultry and eggs, wine and brandy, beet sugar, hops, hides, wool, etc., not less than \$300,000,000.00, or about \$115,000,000.00 more than the average of all the states of the Union.

Our output of cereals was conservatively: Barley, which now takes first place in California, 975,000 tons; wheat, 212,000 tons; oats, 140,000 tons; corn, 45,700 tons, and hay, 3,786,250 tons. There is some rye, hemp, flax, and buckwheat grown in this State, but the quantity of these products is not sufficient to enter materially into commercial calculations. Cotton growing in Imperial County and rice growing in the Sacramento Valley have attracted considerable attention the last few years, and in the case of the former the acreage and annual yield is

increasing very rapidly, promising soon to add a material item to our State agricultural wealth.

Wool shows a gradual decline, falling off from 26,000,000 pounds, in round numbers, for the banner year of 1902, to 13,300,000 pounds in 1910. The number of sheep in California is 1,900,000, which gives an average clip of 7 pounds, as against an average of 7.05 for the Western States, or 6.7 for the United States. About one third of the wool in this State is clipped in the fall and about two thirds in the spring.

Our dairy industry grows with the increase of irrigation and the advance of intense farming, the total output from all branches of this industry last year being, according to the State Dairy Bureau, which perhaps has these figures more complete than ours, \$28,256,609.00, or an increase of \$2,000,000.00, in round numbers, over the year before.

The sugar beet industry is making rapid strides, the figures of 1910 showing an increase in the yield of sugar over 1909 of more than a million pounds, or a total of 290,000,000 pounds. The hop crop was a fair average, aggregating about 6,500 tons. Beans fell off from the record yield of 1909, yet the crop was the largest excepting that of last year ever harvested in California, being carefully estimated at 85,000 tons. Our figures are only partial on some products, of which honey is one. Last year, 1909, we had a big yield, figured by some as high as 11,000,000 pounds; this year the output is about half, or estimated at 5,500,000 pounds.

California's horticultural output, which has become a leading item in the State's wealth, averaged well with recent previous years, while prices on the whole were such as to insure fair returns to the producers. Not taking into account the large amount of fruit that goes into local consumption, and taking our figures from the shipping exchanges and the packers, or as gleaned from them by the California Fruit Grower, an accepted authority, along with some obtained from independent sources, the yield from California's orchards, vineyards and gardens last year, or for 1910, was substantially:

Fresh deciduous fruit shipped out of the State, exclusive of apples	11,933 cars
Apples shipped out of State	2,104 cars
Citrus fruit shipped out of State	33,089 cars
Raisins cured	62,500 tons
Prunes cured	37,000 tons
Peaches cured	25,000 tons
Other fruits cured	23,775 tons
Canned fruit (estimated)	3,500,000 cases
Canned vegetables (estimated)	1,500,000 cases
Fresh vegetables exported	89,780 tons
Almonds produced (estimated)	3,500 tons
Walnuts produced (estimated)	4,500 tons
Wine produced (estimated)	46,000,000 gallons
Brandy produced (estimated)	6,500,000 gallons

Reducing all these figures to a dollar and cents basis, the tremendous value of the farm, orchard, and vineyard interests of California are apparent at a glance, and in these figures the live stock interests, which are valued at \$50,000,000.00, are not taken into account, barring the reference to wool, nor is the olive crop, now worth at least \$1,000,000.00 a year to the State, included.

Mining is important, lumbering is important, commerce and manufacturing are important, but they all lean more or less on agriculture. What makes for the uplift of the farm and the farmer makes for the prosperity of the State; hence any measures in law or policy wisely aimed to better the condition of agriculture or the agriculturist in California should meet with generous approval.

Very respectfully,

H. A. JASTRO,
President.

Attest:

J. A. FILCHER,
Secretary.

FINANCIAL STATEMENT.

February 1, 1910, to January 31, 1911.

SUMMARY.

RECEIPTS.

1910.		
Feb. 1—	Cash balance	\$346 46
	Park and pavilion receipts	30,283 80
	Rent	1,950 95
	Entrance due	674 05
	Futurities	4,164 00
	Fred L. Martin, special treasurer	2,756 00
	California National Bank	540 26
	American Shorthorn Breeders' Association	820 97
	Appropriation for aid	20,000 00
	Total	<u>\$61,536 49</u>

DISBURSEMENTS.

1911.		
Jan. 31—	Expense	\$14,891 95
	Races	5,112 00
	Salaries	6,525 00
	Pay rolls	6,428 85
	Advertising	3,726 57
	Interest	29 63
	State Treasurer	2,205 71
	Building and improvement	7,949 62
	Premiums	14,465 03
	Cash	202 13
	Total	<u>\$61,536 49</u>

CEREAL CROP OF CALIFORNIA, 1910.By T. C. FRIEDLANDER.

The year 1910 has accentuated the change that has been working for some years in the cereal products in the State of California. Barley has easily taken first place with the largest crop yet harvested. The total is estimated by the United States Department of Agriculture to be 971,900 tons of 2,000 pounds each, as against a crop of 750,000 tons in 1909. These figures are larger than the general trade estimates, but the difference between the two crops is conceded to be about what the department figures show. The value of the 1910 crop is about \$19,000,000. Exports by sea from the first of May to the thirty-first of December, 1910, have been 207,615 tons, and an amount estimated at 20,000 tons has gone forward by rail. While the exports have practically all been for malting purposes, the bulk of the crop is used for feed purposes, barley being the staple feed crop of the State, occupying the same position that corn does in other parts of the United States. This is the grain of greatest economic worth to California, and this will be constantly accentuated as the acreage to alfalfa and other grasses is increased and the raising of live stock assumes larger proportions.

California has not for some years raised sufficient wheat for its own consumption. The crop of 1909 was 201,000 tons, with the total consumption estimated at 435,000 tons. The small yield of wheat of later years is owing in some measure to unfavorable seasons, but is chiefly due to the change of acreage from wheat to barley.

The other cereals play a minor part in the cereal production of the State, but it is to be hoped the cereal investigations now being conducted by the agricultural department of the University of California will result in discovering a species of corn that can be profitably raised under California's conditions of climate and soil and take its place with barley as a feed crop.

In the years to come an increase in the crops of both wheat and barley can confidently be expected. As already stated, the demand for barley will be constantly on the increase. This will insure good prices, and with the price of wheat as attractive as it has been for the past few years, farmers will continue to seed to these grains.

Perhaps the more important factor in large crops will be better farming, such as deeper plowing, selection of seed and approved methods of dry farming, insuring much larger yields per acre.

WHEAT CROPS AND DISTRIBUTION.

The following table shows the rainfall at San Francisco for a series of years and the wheat crop of California and distribution, in cents:

Season.	Rain-fall.	Crop year.	Crop.	Exports.	Local consumption.	Carry over stock.	Imports.
1889-90.....	45.85	1890	18,889,680	17,388,400	6,300,000	1,977,940	1,740,440
1890-91.....	17.53	1891	21,095,440	16,586,380	6,000,000	2,451,000	1,964,000
1891-92.....	18.53	1892	20,445,960	13,489,480	6,300,000	5,727,580	1,520,100
1892-93.....	21.75	1893	19,904,640	11,883,540	6,500,000	7,878,980	1,630,300
1893-94.....	18.47	1894	14,335,844	11,095,480	7,200,000	6,456,000	2,536,660
1894-95.....	25.70	1895	15,730,004	13,613,980	6,800,000	2,930,700	1,168,560
1895-96.....	21.25	1896	17,452,041	13,452,693	7,000,000	1,990,272	2,060,224
1896-97.....	23.43	1897	18,351,786	12,907,953	6,800,000	3,388,606	2,754,501
1897-98.....	9.38	1898	7,341,220	4,259,913	7,000,000	3,585,606	4,115,683
1898-99.....	16.37	1899	19,462,047	9,455,737	6,860,000	8,615,583	1,883,667
1899-1900.....	18.47	1900	12,230,516	11,211,648	7,190,000	4,218,718	1,774,267
1900-01.....	21.17	1901	18,620,263	13,710,220	7,270,000	2,984,147	1,125,386
1901-02.....	18.98	1902	11,255,698	8,576,530	6,785,000	1,401,910	2,523,595
1902-03.....	18.28	1903	8,958,599	3,631,899	7,181,500	2,636,430	2,950,320
1903-04.....	20.59	1904	6,537,131	3,665,370	7,306,660	1,105,539	2,904,008
1904-05.....	23.45	1905	3,197,138	1,800,922	7,535,920	1,684,878	6,885,073
1905-06.....	20.42	1906	6,001,439	1,648,493	7,442,000	1,725,547	3,129,723
1906-07.....	26.17	1907	3,843,090	1,319,995	7,550,000	890,907	4,192,265
1907-08.....	17.35	1908	3,219,110	821,893	8,172,000	1,033,604	5,917,480
1908-09.....	25.57	1909	4,021,714	845,913	8,700,600	1,424,568	5,915,768

ACREAGE AND PRODUCTION OF BARLEY IN CALIFORNIA.

Compiled by the U. S. Department of Agriculture.

Year.	Acreage.	Average yield per acre bushels.	Production, cents.
1892.....	845,240	-----	9,737,164
1893.....	760,716	-----	8,215,732
1894.....	737,895	-----	5,323,681
1895.....	937,127	20.3	9,131,365
1896.....	918,384	21.6	9,521,805
1897.....	881,649	23.0	9,733,404
1898.....	872,833	10.5	4,399,078
1899.....	855,376	26.0	10,675,092
1900.....	889,591	16.7	7,130,961
1901.....	1,089,785	26.0	13,606,526
1902.....	1,144,274	26.0	14,280,539
1903.....	1,201,488	25.7	14,821,556
1904.....	1,237,533	22.7	13,484,160
1905.....	1,237,533	21.5	12,771,340
1906.....	1,425,000	27.2	18,760,000
1907.....	1,040,000	28.9	15,028,000
1908.....	1,082,000	23.5	12,204,960
1909.....	1,180,800	26.5	15,009,600
1910.....	1,306,387	31.0	19,438,040

WHEAT QUOTATIONS, 1909-10.

Average, highest and lowest prices of No. 1 white wheat for each month of the past cereal year. Quotations based on actual transactions in sample market:

Month.	Average.	Highest.	Lowest.
1909.			
July -----	\$2 10	\$2 15	\$2 05
August -----	1 87½	2 00	1 75
September -----	1 72½	1 80	1 65
October -----	1 82½	2 00	1 65
November -----	1 82½	1 85	1 80
December -----	1 97½	2 00	1 95
1910.			
January -----	\$1 97½	\$2 05	\$1 90
February -----	1 93½	2 00	1 87½
March -----	1 85	1 95	1 75
April -----	1 67½	1 80	1 55
May -----	1 54½	1 58½	1 50
June -----	1 45	1 50	1 40

BARLEY QUOTATIONS, 1909-10.

Average, highest and lowest prices of No. 1 feed barley for each month of the past cereal year. Quotations based on actual transactions in the sample market:

Month.	Average.	Highest.	Lowest.
1909.			
July -----	\$1 45½	\$1 48½	\$1 42½
August -----	1 40	1 45	1 35
September -----	1 37½	1 40	1 35
October -----	1 40	1 45	1 35
November -----	1 45½	1 47½	1 43½
December -----	1 48½	1 52½	1 45
1910.			
January -----	\$1 41½	\$1 50	\$1 32½
February -----	1 37½	1 40	1 35
March -----	1 40	1 45	1 35
April -----	1 22½	1 35	1 10
May -----	1 10½	1 15	1 06½
June -----	1 05	1 10	1 00

CALIFORNIA FRESH FRUIT.

By F. B. McKEVITT, Manager California Fruit Distributors.

The marketing of a great crop of shipping fruit such as California now produces is a problem deserving of most careful study on the part of growers and shippers alike. Did we have our own crop alone to consider the solution would be easy, but California is not the only State with great horticultural interests. Texas, Georgia, the two Virginias, Delaware, Maryland, New Jersey, New York, Ohio, Michigan, Missouri, Arkansas, Colorado, Idaho, Utah, Washington and Oregon are all heavily interested in the same lines of fruit growing and while it is true we have a much greater range of production, including some varieties that are not grown at all elsewhere, we can not escape the financial consequences of the competition of their products, but must endeavor to so shape our course that we will minimize it to as great an extent as possible. How to do so successfully is the problem and the solution justifies all the thought, care and expense demanded by interest that controls the prosperity of thousands of our fruit growers and involves sales of a gross value of \$12,000,000 to \$15,000,000.

The first thing we have to do, after the season has advanced far enough to allow us to estimate our own production, is to figure what other sections will have. We must have the best information obtainable on this subject, covering not only probable production, but also the time of ripening. Records show what it has been in the past, and then, as the season is reported, so many days earlier or later, we can estimate, with normal weather conditions, the time when to expect their heavy shipments and so avoid them as much as possible. The season in California must be considered also, as it occurs every now and then that a little difference in ripening—earlier here and later there, or vice versa, may make a profitable opening for a variety that at any other time perhaps would not bring freight. Certain sections of the country outside of California market their shipments in some markets to the comparative exclusion of others—this tendency must be known and taken into consideration, avoiding as far as possible those markets likely to be overloaded with competitors' stocks, and shipping more heavily to others that they do not, or can not reach. The conditions referred to have more bearing upon the shipment of peaches than any other variety, as that is the competing fruit produced most largely in the south and east, but have their effect on all varieties, since we cannot expect to sell any fruit at high prices if the market is supplied with local stock which is both plentiful and cheap.

When crop and market conditions have been determined and shipment begins then comes the necessity for such a distribution of our fruit among the different markets as seems likely to secure best returns for same. No actual systematic distribution is possible unless a large volume of the business is controlled by one central agency. So long as

considerable shipments are made by independent operators, distribution is rendered more or less uncertain. Every shipper, independent or otherwise, will strive to reach the best markets, but a lack of knowledge as to where the shipments of others are going will always handicap distribution and to a considerable extent nullify it. It is only a few years ago that all shippers were acting independently with the result that frequently markets were overloaded with consequent heavy losses, and others left under-supplied where a small quantity of fruit would sell at high prices. The complaints of the losing growers who depended on these sales, not only for their profits, but for very existence, were generally met with the explanation that other companies had shipped in so many cars that they overloaded the market and it could not be helped. Then the shippers all and singly came in for a sound scolding because they did not "get together" to prevent such senseless slaughter. It was in obedience to this demand, and in recognition of the fact that something must be done to remedy the evil, that the California Fruit Distributors was organized. So far as the business of this corporation was concerned the evil was remedied, distribution was accomplished, red ink returns instead of being a common thing became almost unknown; then the grower began to worry because he was afraid the shippers had formed a "trust," and his interests were in danger. This idea has been systematically encouraged by competitors who depend largely upon that alone to increase their business, and who are unwilling to spend a portion of their earnings in supporting and upbuilding an institution which from the very nature of things can not prosper without bringing prosperity to the growers in an even larger measure than to the shippers. If good distribution means better prices for fruit, then every grower who wishes to prosper, and desires to see the industry prosper, should support an institution which is working to bring this about and which is able to do so. It is a well known fact that a large percentage of the fruit shipments of this State is handled for the grower's account. He grows, picks, packs, and delivers his fruit to the firm with whom he is doing business and same is shipped and sold for his account, the amount realized, less established and well known charges, going to him. No effort is spared to secure the best results as satisfactory returns mean satisfied and friendly growers—a result that is of far greater value to the shipper than the small profit received; the work of the California Fruit Distributors, contributing so largely to this end, does not add one cent of expense to the grower, being entirely covered by an assessment levied on the business of the shipper.

There never will be anything in the nature of a trust in this business. Fruit is most largely sold at auction; these auctions are open to all, and can be and are used by growers who ship in car lots. It is not likely that any other method than this will ever be used by California fruit shippers in the large cities, but should the business retrograde to the private sale plan, that is as open to the grower as the other. If all fruit sent out was purchased by the shipper, and the grower was compelled to take such a price for his product as was offered, or let it stay at home, there would be danger, but as it is the grower can either sell f. o. b. if the opportunity offers, or send it forward on consignment, to be offered for sale to competitive buyers who

will base their bids on the value of the fruit. The shipper sends his own fruit to these markets he must sell it in the same place, in the same way, and to the same buyers, enjoying no advantage whatsoever in its sale that is not open to every grower. With these opportunities open to him, the ability to purchase supplies at fair prices and with the lowest commission charge known for similar service, the California grower is well protected and never need be misled by the cry of "trust" to lose faith in those who are his friends, many of them fruit growers themselves, and who are now, as they have been in the past, working hard to advance the interests of the fruit industry of this State.

Leaving you with these few thoughts upon marketing, we will proceed to consider briefly the shipments and results of the past season.

At the opening of the season we were confronted with the prospect of having to meet unusually heavy competition from the fruit of other sections. Texas, which produced very little in the preceding season came to the front with a crop of peaches of 4,200 car loads, followed by Georgia whose output of 2,100 car loads in 1909 was nearly three times as heavy, amounting to 6,100 car loads in 1910. Then came Delaware, Maryland and New Jersey with a yield of over 3,000 car loads against a practical failure in 1909; New York with 4,000 car loads of peaches and nearly as many more of grapes; Ohio, including the islands of Lake Erie, marketed over 1,000 car loads of peaches; Connecticut, 500 cars of peaches; Arkansas and Missouri, 700 cars of peaches; Colorado and Utah, 1,000 cars of peaches, and Washington 2,000 cars of peaches. In addition to this Michigan, although badly crippled by frost, produced considerable quantities of both peaches and grapes. West Virginia had an abundant crop, and old Virginia, although not a large producer, appeared in the arena not only with a good crop of all varieties, but surprised everybody with a crop of cherries which appeared in market as early as May 10th.

Nor was California behind in the race. Our fruit crops of all kinds were heavy with the exception of table grapes which were cut down nearly 1,000 cars from last year's output. With this heavy crop in sight, and a certainty of a low dried-peach market, the great problem of marketing our vast output profitably was a serious one and caused many misgivings as to the financial results. We are now able to look back on the history of the season and may congratulate ourselves upon the happy outcome. While no fortunes have been made, the results have been considerably above the average, and most of our growers have something to show for their efforts. That this is the case is owing largely to the effective system of distribution employed, to improved selection and packing of our products through the standardization movement inaugurated and enforced in many of our principal districts, and so far as peaches are concerned, to the good fortune which enabled us to ship a considerable percentage of them at a time when there was a gap in eastern crops.

Cherry shipments were of the same volume as last year, the figures being 250½ cars against 249¾ in 1909. The first car was shipped April 29th; it was a full car, containing over 24,000 pounds, and was made up principally of Vacaville fruit, but included shipments from Suisun and Sacramento. The season opened nine days earlier than last year. The crop was of good quality, carried well and gave satis-

faction to the trade. Prices were above the average and some exceptionally good sales were made as is shown by the fact that the first sixteen cars shipped by this organization grossed \$65,350.00 or over \$4,000.00 per car. The demand for this fruit is increasing and several markets are now car lot handlers where a few years ago express shipments covered all their requirements.

The apricot crop was good and shipments exceeded those of 1909 by 80 car loads, the exact figures being $209\frac{1}{2}$ cars in 1909 and $289\frac{1}{4}$ cars in 1910. Considering the larger quantity shipped, prices were fairly satisfactory. This fruit has never been a favorite with the eastern public, owing undoubtedly to the fact that it must be picked rather green to insure sound arrival, and therefore is almost entirely lacking in the delicate flavor which, could it be preserved, would make it more popular.

Shipping plums of nearly all varieties were a good crop throughout the State. Shipments were $1,552\frac{1}{2}$ cars as compared with $1,526\frac{1}{4}$ in 1909. Outside of the early shipments which were injured by a few days of hot weather, thereby checking their growth, the fruit was of good quality and sold at prices considerably above the average. Plums are growing in popularity every year; it is to be hoped that this will continue to be the case as many new orchards have been planted and a large acreage of old orchards of peaches and apricots is being worked over to the new variety. Plum production seems likely to double in the next five years.

The pear crop was good, but not heavy. Shipments were 2,361 cars against 2,638 in 1909. Prices realized were not as high as last year owing to the fact that the great bulk of our shipments were offering at a time when very heavy consignments of Georgia peaches were being marketed; these peaches sold at low prices making it difficult, if not impossible, to dispose of large quantities of pears at high prices. The latter part of the season showed very satisfactory results. Winter pears were a light crop; they were in strong demand and sold well. Cannerymen were liberal purchasers of Bartletts and paid very good prices, the quantity used by them more than offsetting the decline in eastern shipments. There has been no material change in the conditions of our pear orchards. While there has been some "fire blight" it has not been of a serious nature and generally speaking we may say that the pear orchards of the State are in as good condition as they were one year ago. No expense should be spared, however, in cutting out and destroying blighted limbs wherever they appear, as whenever climatic conditions are favorable we may expect the return of the disease in virulent form, unless before that time we are successful in completely cleaning out all infection.

Peaches: Notwithstanding the fact that the United States produced in 1910 the largest peach crop in its history, this State shipped nearly as many cars as in the preceding year, the figures being 2,518 this season against 2,599 in 1909; strange as it may seem we realized better returns this year than last.

Opening prices for dried peaches were so low that the fruit was not worth over \$10.00 per ton for drying. This accounts for the heavy shipment, a considerable portion of which fortunately for us came at a time when a partial break in eastern supplies enabled us to sell at

very satisfactory prices. The Elberta was the best selling variety. Picquet's Late and Salway as usual sold very low, and so far as eastern shipping is concerned, our growers would make no mistake to eliminate them entirely. It would be well for us if more peaches of the Elberta type and ripening at different seasons could be found, as its large size and high color make it a great favorite. The great lack in the State to-day, as we have pointed out in the past, is a succession of highly colored and good sized varieties of peaches with thick skins. With regular supplies of such fruit, markets can be found that would take them throughout the season regardless of the crops of other sections, except, of course, that we would have to meet them on price. The peach industry is not in as good condition as it should be and that is because the price of dried peaches has fallen so low. These low prices do not indicate that the product is unpopular, because it is not, but the reason is to be found in the fact that the consumer is to-day paying as much for it as he did years ago when living prices were paid to the grower. We believe the retailer is the man who is killing our business by preventing the extensive demand that low prices would bring, and unless we can find some means of reaching the consumer and dealing with him direct, there seems to be little hope for a change. For this reason, if no other, the fruit growers and dealers of California should do everything in their power to secure the "parcels post," which would enable them to come into direct personal relations with consumers all over the country, supplying small packages of assorted fruits delivered at their homes for a reasonable price and introducing our products into thousands of families where it has as yet never been used.

With a stable and profitable market for dried fruit we are safe, as then we can either ship or dry, regulating our procedure in line with what seems likely to prove most remunerative.

Grape shipments promised early in the season to be of about the same volume as in 1909. Generally speaking, the crop did not set as heavily as last year, but the increased acreage of young vineyards coming into bearing was expected to rather more than offset this condition. Shipments which were 5,880 cars in 1909 fell to 4,945 cars in 1910, this decline being accounted for by considerable losses in the Fresno district by mildew and a few days of hot weather, and in other sections, where the Tokay is the principal crop, by the latter. Thompson Seedless and Malaga grapes were in strong demand, and sold at satisfactory prices. Early and late Tokays also sold better than usual. During the height of the season prices on all grapes dropped to a low level and many cars were sold at a loss. Emperors, when of good quality, sold well, but a considerable portion of the crop was not up to the standard and in consequence brought low prices.

The total shipments of deciduous fruit for the season, exclusive of apples, amounted to 11,993 cars; the average selling value, as nearly as it can be determined at this time was about \$1,100.00 per car. Estimating the average freight and refrigeration per car at \$390.00, commission \$77.00 and loading \$20.00, the gross charges against each car would aggregate \$487.00, which being deducted from \$1,100.00 leaves \$613.00 per car returned to the grower, or a total in round numbers of \$7,315,000.00 out of which must be paid all expenses for producing the crop and getting it ready to market.

Railway service during the season was better than ever before until nearly the close, when it "fell down" as usual. A schedule of about one hundred and forty-five hours to Chicago was put into effect by the Southern Pacific for the benefit of the orange growers, which service was subsequently extended to our shipments. The Atchison, Topeka and Santa Fe Railroad maintained the same schedule, and their service was also satisfactory.

The Western Pacific Railroad made its entry into the fruit business this year and transported a considerable percentage of our shipments. Their initial service was rendered in remarkably short time, their fruit trains almost approximating the time of passenger service, and in all cases equaling the best service of other roads. The new line has fully demonstrated its ability to handle successfully this class of business and will undoubtedly grow to be a very important factor in the fruit industry of the State.

The refrigerator car service has been satisfactory. This branch of the business is in strong and capable hands, and the fruit growers of California have reason to congratulate themselves in having their interests so carefully looked after. Owing to the reduced crop, the car supply was adequate, a slight trouble from shortage occurring but once during the season, but demonstrating the fact that the supply is not yet quite equal to the demands of the business. With the natural increase in shipments more equipment will be needed another year and we wish now to call the attention of the officers of the Pacific Fruit Express car line to this fact, so that the necessary steps to provide for the business may be taken in time.

In regard to the question of rates much might be said, but it is largely a repetition of the old story which we all know so well. We are a long way from our markets and at best it will always cost us a large percentage of our sales for transportation and refrigeration.

Immediately following the close of last fruit season the chief horticultural officer of California called a number of meetings in various fruit centers for the purpose of directing attention to evils resulting from indiscriminate and faulty packing of our green fruits and lack of care in throwing out and rejecting all imperfect, wormy or defective specimens. These meetings awoke widespread interest, were well attended, and resulted in steps being immediately taken to secure the standardization of our pack. The plan was followed out in several districts, where salaried inspectors passed upon the fruit before it was loaded into the cars, allowing nothing to go forward that did not conform with the standard established. The result of this work has been plainly apparent throughout the season, purchasers being well pleased and rejections much less frequent than in past years. We believe that a very considerable portion of the good success attending the marketing of our crops this season is directly traceable to this work and we extend our congratulations to State Commissioner of Horticulture Jeffrey for his farsighted action which has resulted beneficially already and with its universal application will work a lasting benefit to the whole industry.

THE CALIFORNIA ALMOND GROWERS' EXCHANGE.

By Manager J. P. DARGITZ.

In reporting the accomplishments of the California Almond Growers' Exchange for the first time we should probably preface our remarks by saying that we have really only a partial year's work upon which to base our report.

The work of organizing was begun on the 18th day of March and at the present time we have a good portion of the crop still unsold. Therefore, the report must be only a partial one. It is not necessary to go over much ground in detailing the events which led up to this organization.

The almond growers having for several years attempted in various localities to effect something of an organization to secure more stable markets and better facilities for marketing their product, about five different local organizations had been working for one or more years, and they were brought face to face with the fact that working independently of each other their product was constantly in competition with itself as far as the grower was concerned. In order to overcome this it was deemed advisable to attempt an affiliation of these various local associations into a central exchange, or marketing body. In carrying out this idea eleven different associations were organized and incorporated under the new law as non-profit coöperative associations. These through equitable basis of representation were joined together in the California Almond Growers' Exchange as a central or marketing body. This body was also incorporated on a plan similar to the local associations all of them being non-profit coöperative organizations, wherein the individual grower becomes the unit in determining and controlling the policies. The work and scope of the central body are limited to the securing of supplies and information necessary for its various members and the members of its affiliated associations, and giving the best instruction in regard to a uniform and properly prepared product for market. Also determining the market conditions of the world affecting the almond crop and place these conditions before its members, and marketing the crop.

We have recognized the inability of each individual member to obtain for himself all this information, but by coöperation it is possible to gather such information and place it in a condensed form before its various members. Heretofore it has been a very easy matter for certain interested parties to determine quickly the result of any particular crop damage in foreign almond growing countries, and then, before the grower in California could become aware of these conditions, said parties would send their agents out through the country and buy the growing crop at a price which means a handsome profit to the people who buy. The result of this organization will be in the future to prevent any such action as the members will be posted promptly in case of anything of this kind.

Starting out as late as we did to effect the organization, it has been considered very good work to have secured about forty per cent of the tonnage of the State for this association during the first year. Of course, we expected many obstacles would have to be met and overcome, and we have not been disappointed in the number of these obstacles that we have found in our path. It was only natural that those who had profited by the past methods of handling the almond crop of this State should be disinclined to give up the business which they had established, and which meant no inconsiderable income to them. Therefore, efforts were made to head off the organization by starting out to buy the growing crops from the various districts as early as the last days of March, and paying unusually good prices. The growers in many cases were unaware of the efforts at organization. More of them were unaware of the damage to foreign crops, and in some cases failures of former efforts at coöperative marketing on the part of growers of various fruits were flaunted before the eyes of the almond growers by interested parties, and they were very earnestly assured they needed to be cautious. In addition to this, we have had the largest almond crop in California this year that has ever been produced and this, naturally, would have meant low prices. We have had political disturbances throughout the nation practically equal to the presidential campaign, and this has had its effect to keep down prices, yet in the face of all these disturbing elements we have been able to steady the market and maintain prices so that we feel growers have profited to the extent of between \$100,000 and \$200,000 on their crop this year. Under prevailing conditions affecting the markets, if it had not been for the work of this exchange in maintaining prices and steadying the market, we feel sure that prices would have been unusually low, and operators, who bought as a speculation in March and April, were fortunately able to protect themselves because of this organization. The growers who remained outside of the organization, as is often the case, were able to profit by its work, being able to sell at good prices established by this association their product, while members of the association had to hold their crop in the warehouse in order to maintain the market.

However, this is all history now and practically all of the unsold portion of the crop of 1910 is in the possession of this exchange, and, therefore, there should be no thought of demoralizing the market by forcing sales indiscriminately. The present holdings are not large, being very much less than 500 tons, and every report of market conditions and supplies, which we are able to gather, indicates that the holiday trade will clean up everything in the dealers' hands and then they will call upon us for the stocks we are holding. It is a self-evident fact that when the trade is slow to buy if we press the matter of selling we will break the market. This we can not afford to do. It would be equally injudicious for the growers and for the trade. The trade is, in a measure, cautious about buying, fearing that the growers will not hold their product long enough to meet the legitimate market demands, but that becoming frightened they would dump everything on the market and so utterly demoralize the same. But in all the history of coöperative organizations no greater spirit of loyalty has been shown than by the members of the California Almond Growers' Exchange.

Here are the conditions in a nut shell: The general business of the country is cautious, buying only for the immediate needs; double the average crop of the State; doubt as to our ability to maintain prices; our efforts to maintain the prices which the legitimate trade of the country warrants in the face of supply and demand.

Suppose with a sluggish market that we as growers would have dumped all our holdings on the market at once, being twice what the trade wanted, and what would have resulted? Prices would have dropped 3 or 4 cents a pound, which would have meant more than \$200,000 to the almond growers of California on this year's crop, and that is exactly what would have happened in our judgment but for the California Almond Growers' Exchange.

If there is any serious doubt about this, there is yet time to prove it. Put our 450 tons of unsold almonds on the market and force a sale in the next ten days, and the proof will be evident. But by holding on and selling as the trade requires, we can close out all our holdings in the next three to four and possibly five months at maintained prices, and the growers will have won the day.

We have learned some things in this our first year's experience.

First—We must have uniform bleaching and grading of almonds. This can be done by each local association having its own warehouse and bleaching plant, so that one competent man for each association can do the work. As this will save at least one third the expense of having it done by the individual grower, it ought to be brought about.

Second—A better marketing arrangement, perhaps our own brokers.

Third—Some arrangement by which we can advance one half the value of the crop to the grower upon delivery whether it is sold or not. This is done on grain and should be done on nuts and will be very likely hereafter.

This organization must not be permitted to buy for that would permit of speculation, which spells ruin to any coöperative marketing organization.

This is but a culmination of long efforts, which have been working for the betterment of the tillers of the soil as well as the orchardist and vineyardist. Generally speaking, the period from 1785 to 1850 represented the idea of preparation for the betterment of the agriculturists and horticulturists through coöperation. The next period covering the years from 1850 to 1870 has been indicated as the period of agricultural exhibitions of county fairs, which was a step in the direction of improving the product of the field and orchard. From 1870 to 1893 begun the period of organization among this class of people.

A mistake was made in beginning at the top instead of the bottom for the work of organization, and an attempt to centralize power and to form organizations that were too large and unwieldy to be properly handled without experience, led to the necessity of having a different form of organization. Since 1893 is the period in the United States which has pointed to the work of coördination of various organizations, that is making a unit of the individual grower and then local associations of individual growers being generally gathered in large coöperative movements.

Not the least of the beneficial effects resulting from the work of the California Almond Growers' Exchange is the gathering of marketing

conditions from the world at large. The selling or actual marketing is but the conclusion of the work. It has been deemed essential that we gather information from various almond growing districts of the world, which shall be utterly unbiased and perfectly reliable. The International Institute of Agriculture of Rome, Italy, has afforded us this opportunity. Through the Honorable David Lubin, the United States representative to this International Institute of Agriculture, we have been able to gather very much information and with his advice, and by the efforts of Congressman Kahn of San Francisco, we have been able to get instructions from the departments at Washington requesting the International Institute of Agriculture to secure and prepare for us reports concerning the almond growing sections of the world, and we hope within two years to have this feature of the work so well organized that no climatic or other conditions affecting the almond crop for better or worse in any country of the world, but will immediately become the property of every other almond growing country. This will unquestionably work out the problem of determining the actual market value of the almond crop of California in any year on the basis of supply and demand of the world.

It is not our purpose to create a trust, nor is it our purpose to unduly inflate prices, but it is our purpose to determine what the almond crop should be worth in any given year and to steady and maintain such a price. Whenever the grower, the consumer, and the legitimate trade learn just what this means they will all favor the proposition, and we look to see the day when almond buyers and almond brokers will be just as much pleased with the work of this exchange as will the almond producer and the almond consumer.

THE CALIFORNIA RAISIN INDUSTRY.

By GEORGE ROBERTSON.

California, within a generation, has made a world-wide reputation for all its fruits, and produces more than one quarter of all the fruit raised in the United States, New York being second, but a long way behind. Practically all dried fruits produced in the United States come from California.

That there is still ample room for the further development of the fruit industry in this State is proved by the fact that in 1908 we imported foreign fruit and nuts to the value of \$37,354,000, and in 1909 to the value of \$31,110,000, while the exports of domestic fruit and nuts were only about half these sums, amounting to \$14,338,000 in 1908 and \$16,568,000 in 1909.

OUR TEN BEST FOREIGN CUSTOMERS FOR FRUIT AND NUTS IN 1909.

	Value.
United Kingdom -----	\$5,400,411
British North America (Canada) -----	4,635,285
Germany -----	2,506,051
Netherlands -----	1,349,769
Australia and New Zealand -----	347,050
France -----	325,579
Belgium -----	320,478
Cuba -----	252,182
Mexico -----	190,451
South America -----	127,390

The effect of the great expansion of the California raisin crop has had the satisfactory result of greatly decreasing the imports of foreign raisins, which, in 1884, amounted to nearly 54,000,000 pounds, but in the last three years have only averaged about 6,000,000 pounds, while the exports of California raisins have increased from 3,000,000 pounds in 1898 to nearly 8,000,000 pounds in 1909.

The quantity of Sultanas imported into the United States is not so great as is generally supposed, the average for the last two years being under 2,000,000 pounds. The imports of currants have remained remarkably steady for the past fifteen years. The largest quantity imported was 52,000,000 pounds in 1894, when they were duty free, and the smallest the following year when the duty was 1½ cents per pound, with the result that the imports fell off to 16,000,000 pounds. As a matter of fact, currants stand in a class by themselves, and do not compete to any extent with raisins.

Year.	Sultanas imported. Pounds.	Currants imported. Pounds.
1902 -----	2,030,374	36,238,976
1903 -----	3,055,398	33,878,200
1904 -----	3,850,444	38,347,649
1905 -----	1,685,275	31,742,919
1906 -----	7,372,568	37,078,311
1907 -----	1,052,519	38,392,779
1908 -----	1,638,028	38,652,656
1909 -----	2,760,386	32,482,111

HISTORY OF THE PRODUCTION OF RAISINS IN CALIFORNIA.

The grapevine has long been cultivated in California. The Mission Fathers were the first to grow successfully the European grape in this State. They had but one variety, which is still largely grown, and is known by the name of the Mission grape. It was planted at San Diego in 1769, San Gabriel in 1771, Los Angeles 1781, and Santa Barbara in 1786, and was largely used for wine making. It was nearly eighty years later before the raisin grape was introduced into California.

THE FIRST INTRODUCTION OF THE RAISIN VINE.

In 1851 Colonel Agostin Haraszth of San Diego grew some Muscatel vines from seeds of Malaga raisins. In March, the following year, he imported the Muscat of Alexandria from Malaga, Spain, and ten years later, during a visit to that place in September, 1861, he selected cuttings of the Gordo Blanco, which were afterwards grown and propagated in his vineyard in San Diego County. He was thus the first to introduce the raisin vine into California. Another importation of the Muscat of Alexandria was made in 1855 by A. Delmas, and planted at San Jose. G. G. Briggs of Davisville also imported Muscatel grapevines from Spain, while R. R. Blowers of Woodland, Yolo County, started one of the first raisin vineyards in 1863 from Gordo Blanco cuttings received from Colonel Haraszth.

EARLY VINEYARDS IN SOUTHERN CALIFORNIA.

In the more southern parts of the State, Riverside entered the field in 1873, when Judge John Wesley North, the founder of the colony of that name, first planted the Muscat of Alexandria; but grape growing in that district did not become general until about three years later. In El Cajon Valley, San Diego County, the same variety of raisin vines were planted by R. G. Clark in 1873, but most of the vineyards in that county were not planted until 1884-86. In Orange County raisin grapes were also planted about the year 1875-76 by MacPherson Brothers, who, at one time, were the largest growers and packers in the State. Raisins were also produced in San Bernardino and Los Angeles counties in former years, but owing to the ravages of what has since become known as the Anaheim disease, which destroyed thousands of acres from 1884 to 1889, growers became discouraged, and oranges and lemons have taken the place of vines almost entirely.

BEGINNING OF THE RAISIN INDUSTRY IN CENTRAL CALIFORNIA.

In 1876 W. S. Chapman imported some of the best obtainable Muscat vines from Spain for the Central California Colony in Fresno County, which, however, proved in no way different from those already growing in that county. Who produced the first raisins in California will probably never be satisfactorily proved. According to a report of the California State Agricultural Society, raisins were exhibited by Dr. J. Strentzel at the state fair in 1863. The first successful raisin vineyards in the State were those planted by G. G. Briggs of Davisville, in Solano County, and by R. B. Blowers of Woodland, Yolo County. The former vineyard contained mainly Muscats of Alexandria, and the latter, Gordo Blanco. Both these vineyards produced raisins as early

as 1867, but it was not until 1873 that any quantity was placed on the market.

FIRST FRESNO VINEYARDS.

In the fall of 1873, Muscat vines were first brought to Fresno, when 25 acres of the Muscat of Alexandria were planted in the Eisen vineyard. In 1876-77 T. C. White planted the Raisina vineyard in the Central California Colony, Fresno, with Gordo Blanco Muscatels brought from Blowers' vineyard at Woodland. The following year Miss M. F. Austin planted her "Hedgerow" vineyard with the same variety, and Robert Barton also planted 25 acres of Muscat vines, but did not make raisins until later. The Butler vineyard, one of the largest, was first planted in 1879, while Colonel William Forsyth commenced grape growing in 1881-82. Most of his vineyard, however, was planted a year or two later.

PRODUCTION OF RAISINS DOUBLED IN FIVE YEARS.

Twenty-five years ago Fresno County commenced to take the lead, which it has kept increasing ever since, while southern California, especially Los Angeles and Orange counties, continued to fall off in their production, as illustrated by the following summary:

	1885.	1886.	1887.	1888.	1889.
Fresno	2,140,000	4,500,000	7,000,000	8,800,000	9,500,000
Riverside and San Bernardino	2,580,000	3,900,000	3,800,000	5,400,000	5,300,000
Los Angeles and Orange counties	2,780,000	3,600,000	1,700,000	840,000	160,000
Yolo	1,340,000	1,500,000	2,500,000	2,500,000	2,400,000
San Diego	200,000	500,000	400,000	800,000	150,000
Tulare	120,000	160,000	200,000	220,000	300,000
Kern					80,000
Other smaller districts	240,000	300,000	400,000	500,000	500,000
Totals	9,400,000	14,460,000	16,000,000	18,860,000	19,740,000

These figures are only an approximation.

Kings County does not appear in this list, as it was then part of Tulare County, not being organized into a separate county until 1893. Within the last twenty years great changes have taken place. Orange and Solano counties no longer produce raisins; Los Angeles County very few; Yolo County, which at one time produced Sultanias and Thompson's Seedless in considerable quantities, now finds it more profitable to ship them as table grapes; while the large vineyards in Riverside and San Bernardino counties are more devoted to wine grapes. Of the fifty-two counties in California, only ten produce raisins in any quantity:

TWELVE COUNTIES WHERE RAISINS ARE PRODUCED—(CROP OF 1909).

	Pounds.
Fresno -----	83,404,000
Tulare -----	20,000,000
Kings -----	18,000,000
Sutter -----	4,500,000
San Bernardino -----	3,600,000
San Diego -----	3,200,000
Madera -----	2,400,000
Yolo -----	2,000,000
Kern -----	1,100,000
Colusa -----	900,000
Los Angeles -----	600,000
Riverside -----	296,000
Total -----	140,000,000

With the view of presenting an impartial statement, every county (with two exceptions, where no statement can be obtained) has here been given the full amount of raisins it claims to have produced, which in some cases appear to be very liberal estimates. Butte County reported the production of 61,350 pounds last year, and Tehama County 14,000 pounds, but the amount is too small to be taken into account. A good crop in Fresno County is nearer 90,000,000 pounds than 83,000,000, or more than the other thirteen counties combined, and the proportion is between 64 and 70 per cent of the whole crop. Fresno County has only been credited with the balance of the crop and the total for the latter county is decidedly conservative. However, with such an overwhelming predominance, Fresno can well afford to be generous. These figures show that Fresno County now produces about sixty per cent of the raisin crop, or nearly double that of Spain, which has held the lead for centuries, the Fresno crop first being equal to the Spanish crop in 1892. In the early days Placer and Shasta counties produced raisins on a small scale. When raisins were first shipped east in any quantity, it is impossible to say. In 1875 New York reported that up to November 1st, 6,000 twenty-two pound boxes of California raisins had been received. About 1888 Fresno appears to have shipped a considerable quantity for the first time. In 1887 the market reports state that "Fresno raisins of excellent quality are now on the market, especially from the Butler and Forsyth vineyards." The large growers did their packing in those days. While comparatively a few years ago Colonel Forsyth, who was the leading pioneer in seeding raisins, then only in the experimental stage, first put seeded raisins on the market, it was with some difficulty that about 20 tons were disposed of, and no one then imagined the industry would grow to such large proportions. The Pacific Coast Seeded Raisin Company in Fresno can now turn out 300 tons a day, besides other small plants elsewhere. In the last fifteen years the output has increased from 700 tons to nearly 30,000 tons.

RAISIN GRAPE VARIETY.

For more than half a century many varieties of grapes have been brought into California from all the grape producing countries of the world. Coming from different countries they have many names. Some of these have been preserved, some lost, and others have received local appellations. The varieties of raisin grapes are few in number—the white Muscat of Alexandria, the Muscatel, Gordo Blanco—held the first

place; the White Malaga and Feher Szagos are used to a small extent; the seedless varieties are the Sultana (which is grown extensively near Smyrna in Asia Minor and was first brought to California by Colonel Agoston Haraszth in 1861), and Thompson Seedless, so named by the Sutter County Horticultural Society after W. Thompson, Sr., of Yuba City, who procured the cuttings in 1878 from Ellwanger & Barry of Rochester, New York. It was by them described as "a grape from Constantinople, named Lady Decoverly," and is now to be found in all parts of the State. Professor Bioletti of the University of California, and other high authorities, consider the variety identical with the Sultana but an improved variety. The growth of the raisin industry in California has been remarkable. Some thirty-six years ago the raisin crop was estimated to be worth only \$4,000. For the first six years progress was slow. In 1879, the crop first exceeded one million pounds; in 1885 it amounted to over nine million pounds, and the following year jumped up to fourteen million pounds, and continued to increase steadily until it has reached the enormous total of 140,000,000 pounds.

THE PROBLEM OF MARKETING THE CROP.

The home trade of any country is always the most important and the most profitable, as it gives support to a greater quantity of productive labor in that country, and increases the value of its annual produce more than an equal capital employed in foreign trade. When the produce of any particular industry exceeds the demand of the country, the surplus must be sent abroad. Our exports of raisins, although not very large, have been increasing the last year or two, and now exceed the quantity imported.

In 1909 the export of raisins to different parts of the globe was:

	Pounds.
Europe	100,000
North America (Canada)	6,374,222
South America	32,253
Asia	201,756
Oceania (Australia and New Zealand)	1,165,954
Africa	5,896
Total	7,880,161

Canada is by far our best customer, consuming upwards of 5,700,000 pounds. New Zealand comes next with 1,100,000 pounds; Mexico, 177,000 pounds; and Japan, 105,000.

According to high authority, there are good times coming for California raisins and other fruit growers with the opening of the Panama Canal. The London *Times*, in a special article on this subject, recently published, says: "America will control the main trade of the south-eastern Pacific after the completion of the Panama Canal. The center of gravitation of the commercial world will be changed. The effect of the canal upon the import trade of Australia and New Zealand will be that it will render those markets much more accessible to the manufacturing states of America, and will therefore make American competition more keen in these colonial markets than it is at present. But the most revolutionary change will result from the fact that California wines and fruits will be able to compete more successfully in European markets."

Efforts have been made in recent years to increase the consumption of raisins in the United States, and there is no reason why they should not prove successful, as there is ample room for a greatly extended use of this wholesome fruit. The United Kingdom consumes annually about 73,000,000 pounds of raisins and 142,000,000 pounds of currants, or a total of about 215,000,000, equal to five pounds per capita. In the United States, the consumption is less than one pound and a half per capita. In other words, if the American public appreciated raisins, as they have been for centuries in Europe, the acreage in raisin grapes might be more than doubled without causing overproduction.

In order to give stability to the raisin market, it must have powerful and well organized support behind it; in other words, some association or corporation to warehouse and hold the goods, only supplying the market according to the demand. Sooner or later it must come to some form of association or coöperation; it is the growers' only hope for paying prices. In recent years there has been a large carry-over from the old crop, which has to be disposed of early in the season, and the markets in consequence have been more or less demoralized. Another factor in the situation is that many growers, being in want of ready money, are in a hurry to sell at once, which still further helps to depress prices.

ADVERTISING AND PACKING.

In order to dispose of our raisins (or other fruits) much may be done through judicious advertising, but this is an art that requires men of experience to make it a success. During the last two years the Fresno County Chamber of Commerce has devoted a considerable amount of time and money to bring raisins to the notice of the public, by having a Raisin Day on April 30th, and by exhibits in the East and elsewhere. Another matter of the utmost importance is to insure that only good sound fruit is shipped, and that the packing, both as regards quality and weight, is in accordance with the description, for it is well worth while to study the requirements of your customers, especially those abroad. It is a common complaint in consular reports that this matter is seldom considered. If these points are attended to it may give you the key to new or larger markets, and make the open door open wider still.

We may well take notice of Canadian methods which have met with great success. A few years ago an act was passed, among other provisions, prohibiting the use of any designation such as "finest," "best," or "extra quality," unless the fruit was all sound, of one variety, properly packed, and unless not less than ninety per cent was entirely free from any defect. The faced or shown surface must be representative of the quality throughout the package.

Professor Edmund R. Lake of the Oregon State Agricultural College stated a few years ago "that the chief objection to the products of the Pacific coast is that it is not uniform in size, quality and pack, and that there is no certainty that an order placed and filled satisfactorily one year can be duplicated the next on a large scale."

In former years, raisins, especially in wet seasons or when they had been badly sanded, have been washed or "processed," and thus rendered so inferior that packers have not ventured to ship them under their

own brands. This is a short-sighted policy which causes untold damage to the raisin industry, and undoes the value of any amount of advertising. Under no circumstances should inferior or damaged raisins ever be packed; they should be sent to the distillery, fed to hogs and cattle, or even destroyed. In the early part of this year there were two convictions in the east under the pure food law, where the raisins were stated to be full of dirt and unfit for human food. Such cases inflict an immense amount of damage to the industry concerned.

Another drawback to a holdover crop is that raisins, unlike wine, do not improve by keeping; quite the contrary; we sometimes keep raisins too long, but dispose of the wine too soon. The best always pays the best. There is not a commodity in commerce in which some firm or brand does not take the lead of all others. You all know from experience that in food, drink, clothing, and articles of every description, there is always some name, or make, that commands the highest price. Why should this be so? The answer is that the majority of the public are always prepared to pay a higher price when they know that they can depend on obtaining the best. Another disadvantage the raisin industry labors under is having too many brands, and some of them with names that are the reverse of appropriate—and there is a great deal in a name. The Pacific Coast Seeded Raisin Company alone packs raisins for various firms, in upwards of 500 brands.

With regard to foreign trade, all descriptions should be printed in the language of the country for which they are intended; the extra cost would be small compared with the results which would be obtained. We all realize that cheaper transportation for small packages of merchandise would be of the greatest value in this country to producers and consumers alike. A large trade is carried on between the United Kingdom and British colonies, especially, by means of the parcels post. As an illustration, I may mention that a few weeks ago I sent a box of raisins to London. The raisins cost \$1.75; the express charges amounted to \$5.50. Such charges are prohibitory and destroy trade which might otherwise be obtained.

I am not here to-day to "boost" either Fresno County or the California raisin industry. "Boost" is an ugly word, and means in most cases exaggeration. It is far better to present facts and figures in a conservative manner, and allow those interested to draw their own conclusions. Any individual who has been led to expect too much by glowing reports, and finds the result much below his expectations, becomes the worst advertising medium in the world; it is far better to understate the prospects, and it pays to do so in the long run. To sum up, it may be safely predicted that good raisins, well packed, will always be in demand. That the raisin industry has a great future before it there can be little doubt, but to put it on a sound basis, there must be organization or coöperation, which is the only thing that will solve the difficulties which now confront this great industry.

COUNTRY LIFE.

By W. A. BEARD, Member Country Life Commission.

The Commission on Country Life was created by former President Roosevelt in August, 1908, and charged with the duty of investigating and reporting to him the condition of country life in the United States. The members were Dr. Liberty Hyde Bailey, dean of the Agricultural College of Cornell University, Mr. Henry Wallace, editor of *Wallace's Farmer*, Dr. Kenyon L. Butterfield, president of Massachusetts Agricultural College, Mr. Walter H. Page, editor of *"World's Work,"* and Mr. Gifford Pinchot. Later, the President appointed two additional members, Mr. Charles S. Barrett, president of the Farmers' Union of America, and myself.

The inquiry covered all states of the Union. It included a series of public hearings in various parts of the country, farmers' schoolhouse meetings, the results of which were forwarded to the Commission at Washington; a voluminous correspondence, including more than 100,000 replies to a set of questions propounded by the Commission and sent broadcast by the United States Department of Agriculture. The answers to questions were tabulated by the Census Bureau. In addition to these sources of information, detailed studies of assigned subjects were made by individual members of the Commission.

Nearly two years have now elapsed since the report of the Commission was placed in the hands of the President and by him transmitted to Congress. During this period there has been much discussion of the report, followed by organized action in many parts of the country substantially along the lines recommended. The inquiry has served to direct attention to a real need in the country life of the nation and there is in progress to-day a movement designed to meet this need.

Numerous state and interstate conventions have been held for the purpose of discussing country life deficiencies and remedies. Several states have country life commissions, several of the states of the Pacific Northwest have an interstate country life commission and an organized movement that is well advanced. All over this country there are manifestations of interest in the movement, one of the most important being the rapid advance in the development of agricultural education in the public schools and increasing interest in the redirection of the rural schools to the end that they may better serve the interests of the open country. Teachers' associations, as well as other bodies, are active in the movement to develop the latent possibilities of the open country as a place of permanent abode.

So much for the general situation: I shall now endeavor to define the condition which seems to call for remedy. No doubt many good people who have not given deep thought to this matter wonder what this

country life movement is all about. They know the farmers are prosperous, more prosperous than ever before, and fail to see where anything is particularly wrong when the farmers are making money faster than ever before in the history of farming in this country. The fact is, however, that prosperity is not the answer to the country life problem. On the contrary, it is often the largest factor in the development of the very conditions of which complaint is made.

Country life is less inviting and less satisfying than city life, and the country life problem is to develop in the country standards of living that approximate in all that goes to make life worth while, the standards of the town and city.

The problem is important because it is essential that there be maintained in this country a strong, virile, and distinctively American population. This fact was strongly emphasized by President Roosevelt in his message to Congress transmitting the report. He said: "We need the development of men in the open country who will be in the future as in the past, the stay and strength of the nation in time of war, and its guiding and controlling spirit in time of peace."

The fact that country life shows marked deficiencies as compared with city life will hardly be questioned. In order to bring the matter forcibly to your attention, however, I am going to ask you this question: Do you consider the country as attractive as the city as a place of permanent abode? Does your neighbor so consider it? Do your children and your neighbors' children so consider it?

Some of us who are fond of boasting of the manifold advantages of California may find it a trifle difficult to accept the statement that there are deficiencies in the country life of this State as well as in that of the older and less desirable commonwealths. Such deficiencies do exist, however, and we must not blind ourselves to the fact. Here, as elsewhere, the boys and girls reared in the country are leaving it for the city while alien people are taking over the land. Country life in California is undoubtedly more attractive than country life in many other states, but it is less attractive to those born on the soil than city life in California.

In the solution of the problem and the development of a new country life, California should take a leading part. In many respects the agricultural portions of this State present features of attractiveness that are not approached in any other state of the Union, and to this may be added the advantage of a productiveness equaled only in the tropical regions. We are assembled in the very heart of the great valley of California, destined to become the productive area on the American continent, and it would seem that here is the place to develop a rural civilization that will comprise the best the world knows, a country life that will be at once the most inviting, the most satisfying, and an example to country dwellers everywhere.

That this great valley and other agricultural sections of this State will be prosperous and populous is certain. We must not be content, however, with assurance of prosperity merely. The problems of country life must not be confounded with economic problems. The country life problem is of educational, social and other advantages, of suitable environment, of ideals; the economic problems are of dollars and cents.

It is true that a degree of prosperity is essential to the development of a satisfying life in either the city or the country, but prosperity alone is often a bar to the development of the best country life for the reason that the prosperous farmers move to town.

The movement to town impoverishes the country. It removes an important and valuable social element, and it removes the incentive to school and road improvement. It takes to the cities and towns the wealth produced upon the farms and aids in the development of superior advantages there.

In this State we have before us an era of settlement. The greater part of the tillable lands of California are undeveloped or only partially developed, and the resources of these lands are the principal basis of our expectations of increase in population and wealth in all that goes to make a great and prosperous commonwealth. Our country life in the fullest sense is yet to be developed and we are fortunate, therefore, in having called to our attention thus early the need of concerted and organized effort to develop in the country a community life approximating that of the cities.

I have come here to invite your attention to the opportunity which we of California have to lead in a work that means much to this State and more to the nation. The movement from the land to the city must be checked or reversed. The young men and the young women must be taught the value of the advantages which the country offers. They must learn that the prizes of life are available to them upon the farms and they must be interested in the development of the latent advantages of country living.

The time was when the farmer was the leader in the important affairs of this country, and the farmer is coming back. The business of farming is becoming more profitable every year, and will continue to do so because the land area can not be increased while the population must increase. The farm affords opportunities for self-development that are not usually found amid the rush and push of modern city life; it affords opportunity for study and reflection, and these must be the foundation of any real success in life.

We must not view this problem, however, from the standpoint of the welfare of the farmer only. We must consider his contribution to the welfare of the nation at large. A home owning population on the land is and must be the real foundation of the greatness of this republic. To the end that men may be content to remain on the land and rear their families there, country life must be developed to its highest possibilities.

This consideration should impress itself seriously upon us of California. Here we have an alien and unassimilable race that seeks to acquire land in this State and already enjoys a practical monopoly of at least one producing industry. We want neither alien ownership nor a system of landlordism, but a healthy, American and home owning rural population, and the way to assure this is to develop the capabilities of our delightful climatic conditions along lines already approached in some of the most advanced districts of the State.

The problem, both here and elsewhere, is largely of education, and the place to begin is with the educational system. The place to educate the young people to an appreciation of the opportunities which the

country offers is in the country schools. Our schools are not doing this. Our country schools are not seeking to inculcate country ideals or to develop country spirit, nor do they emphasize in any essential way the things of the country. In the country schools, as elsewhere, the tendency is toward the city and the things of the city are exalted.

All this is of interest to you, fruit growers of California. You represent the best intelligence engaged in the farming business and you can do much to further this movement in this State. I have no more interest in this than any other person in this room, and I have no appeal to make to you. I have stated the facts; your interest will suggest the action to be taken.

SQUIRREL ERADICATION.

By SURGEON RUPERT BLUE, United States Public Health and Marine Hospital Service.

The extermination of squirrels has become one of the serious problems of this State. The interest in the subject, prior to 1907, was almost wholly an economic and financial one. Since that date evidence has been collected which proves that this animal is responsible for the transmission of plague and the chief cause of its continuance in this country. As a result, the sanitarian has become interested in the natural history of the ground squirrel, and has joined hands with the economic interests in the war of extermination.

A statement of the annual losses due to these animals should not be necessary. The fruit growers are perhaps better informed on this subject than the general public, so I will mention only a few facts in this connection. In a recent paper Dr. Merriam, of the Biological Survey, stated that they inflict injury on all classes of crops, and rank among the most destructive of our native rodents. The amount of the annual loss to agriculture was given as \$10,000,000.00. This we can readily believe in view of their wide distribution and great numbers on the Pacific coast.

REMEDIAL MEASURES.

The necessity, for coöperation and organization in the work of squirrel destruction is fully appreciated. Without the assistance of the farmer, orchardist, and landowner generally, success will be impossible. With a view of securing the personal coöperation of property owners, a state-wide campaign of publicity and education has been inaugurated by the State health authorities. It is pointed out, in the literature issued, that the project should be taken up for the purpose of protecting the lives of the citizens and also to save the crops from destruction. The viewpoints of both the sanitarian and the agriculturist are thus considered.

A plan of campaign has been proposed which places the legal responsibility upon the shoulders of the county boards of supervisors. As they are the source of authority, all official work should be done with their consent and coöperation. It is the purpose of the health authorities, both Federal and State, to enforce the State law of March 13, 1909, called an "Act for the extermination of rodents." It is believed, however, that the landowner will willingly take up the work, in view of the benefits to be gained by destroying the pests.

The Federal Government, in aid of the State Health Board, has made a liberal appropriation, and will render further assistance by the detail of experienced medical officers whose time will be given wholly to the work. It is realized that the problem can not be solved in a year, or at any fixed time; therefore plans have been made to place the eradication procedures on a permanent basis. With this object in view, a

thoroughly equipped camp will be established in the squirrel-infested region, where practical instruction will be given in field methods. Although designed primarily for the training of our own employees, this camp may be utilized by farmers and others who may desire such instruction. The expense of the camp will be charged against the Federal fund.

The full details of the plan of campaign may be obtained by writing to the Federal laboratory in San Francisco, or from the Secretary of the State Board of Health at Sacramento.

METHODS OF GROUND SQUIRREL EXTERMINATION.

One method, applicable during the wet season when the green grass is out, depends upon the use of liquid bisulphide of carbon, which is put in the holes. A second method depends upon the use of poisoned grain. A common method of applying bisulphide is as follows: From one to three days prior to the application of the poison all squirrel burrows in the area to be poisoned are well stopped with earth. The holes found open upon arrival of the poison squad will indicate to them the burrows containing squirrels. Two men working together can apply the poison most rapidly and economically. One man is provided with a supply of "waste," "sacking," or other absorbent material, divided into a number of small balls about half the size of the first. The bisulphide is carried in an ordinary one gallon oil can, and refilled from time to time from a supply kept in a cool place out of the sun. He is supplied with matches. His "pardner" carries a long-handled shovel. On arrival at an open burrow, a small ball of waste is saturated with two ounces of bisulphide, dropped deeply into the burrow and a match applied. After a moment's time the man with the shovel stops with earth this burrow, and all other burrows near from which the gas escapes. On subsequent inspection of the field all opened burrows will indicate holes lacking effective treatment.

During the dry season some form of grain poison with strychnine will probably serve the purpose best. A formula for the preparation of poisoned barley is as follows:

Whole barley	20 pounds
Starch paste	1 pint
Strychnine sulphate	1 ounce
Saccharine	1 dram

The barley is placed in a receptacle large enough to permit thorough stirring (as a wash tub). One pint of water is then brought to a boil and sufficient laundry starch (about two tablespoonfuls dissolved in a little cold water) is slowly added to form, when well cooked, a paste about the consistency of cream. The strychnine (first powdered, if in crystals) and the saccharine are now added to the hot starch paste, and the mixture well stirred until dissolved. While still hot this is poured over the barley, mixed well, and the whole put aside for several hours before using. This formula is recommended because of its simplicity, cheapness, and effectiveness. Scatter a teaspoonful along the squirrel trails or on hard bare places near the holes. The poison should *not* be placed in heaps on the soft mounds at the mouths of the holes. It will probably be found most efficient if scattered early in the morning, between the hours of three and seven o'clock.

AGRICULTURAL EDUCATION IN THE COMMON SCHOOLS.

By EDWARD HYATT, State Superintendent of Schools.

This, I think, is a fact: that nearly every one to-day believes that our schools must become more closely allied to the industries by which our people live. More particularly, our California schools must be open to the genius of agriculture. Our gold will be exhausted; our oil will all be pumped out; our forests will be gathered to their fathers; all with a reckless haste and improvidence that we can not stay. But the soil will be more permanent. By its fruits California must always, in the large way, stand or fall. Our power and prosperity in the future depend upon the skill and the intelligence by which our people are able to practice the arts of agriculture and horticulture.

It is easy to agree that the schools shall take in agriculture. But it is tremendously difficult to find out just how this may be done. No one knows as yet. There must be myriad experiments and a thousand grotesque failures before we succeed. The casual observer does not dream of the difficulties and stumbling blocks in the way. It is the work of years to get a new idea really planted and growing in the set conservatism of a social institution like our school system. There is danger, when we professional educators take hold of a live and vital thing like agriculture, that we squeeze all the real live interest out of it in order to teach it in a conventional way. When it becomes embalmed in regular text-books, perfunctory recitations, and periodical examinations, it fails of its true mission. It does not get there. If it would truly succeed, ways must be found to keep it alive, to keep it in touch with country life, to invest it with the realities of extracting a living from the soil. And mark you this: the teachers of agriculture are not yet bred. Hundreds of years have been spent in growing good teachers of mathematics, literature, language—let us not run away with the notion that we can build up an agricultural Rome in a day. It is necessary to have some foundation for any kind of building. It is highly desirable to instill a spirit of sympathy for agriculture into the minds of all the people and to bring them into actual contact with the agricultural life. For many generations everything in education has tended away from the farm. The district school never does one thing in all its curriculum to prepare the boys and girls for a living on their fathers' farms. It always heads them rather toward clerkly or professional pursuits in the town or city.

Now the object of this paper is a very simple one, that may be tersely stated. It is to call attention to the fact and to emphasize it, that we must find something different from the traditional text-book method of approach if we would really get the genius of agriculture into the public schools; to name two or three methods of approach that are different, and to suggest that the best plan for a school to undertake agriculture is by finding ways to coöperate personally with the nearest agricultural industry, by actually entering into its spirit and its labors.

A movement has started in the prune orchards of the Santa Clara Valley that bears directly upon these educational questions. The idea

is to enlist the interest and the labor of the children and the people of the villages and towns in the harvesting of our perishable fruit crops, paying them full market wages for their work, furnishing them safe and attractive camping places, facilitating their coming and going, and giving them a season of healthful, active outdoor life. This is a practical course of study in California agriculture that may well command the coöperation of the educational forces of the State. The school term may very well begin and close so that the children and their parents can take part in the chief industry of the neighborhood. The curse of the fruit grower is the lack of labor in the gathering of his crop. This it is that brings the indigestible foreigners upon us, Japanese, Hindus, Chinese. This it is that is forcing much of our richest lands into the hands of aliens. The safety of our nation lies in having our land owned by our own people who earn their living from the soil.

It is a splendid thing to see the schools closed and the villages depopulated during the harvest season; to see the parents and the children living outdoors for a time and helping to pick the hops, gather the grapes, dry the peaches, take care of the prunes, apricots, tomatoes, and all that. It makes stronger, happier, wholesomer people. Everybody may well join in it. There is no loss of dignity in it. It advances the interests of California's great industry, the industry by which we must live for centuries into the future, with the world for a rival. It is truly educational, in the best and highest sense. It is worthy of remark that Homer Craig, an orchardist at Campbell, has been able in this way for the past three years to avoid the use of Asiatic labor. By making things agreeable and attractive for families to come to him for a summer outing, while working in the fruit, he finds that enough labor comes to him to harvest his crop; and this without any coöperation on the part of the school authorities. There is something in this work worth looking into.

The raising of a school garden is a most delightful and practical method of approach. Not all teachers have the knowledge and sympathy that make for the highest success, but nearly all come of ancestry that lived by the soil; and if their minds are open, their hearts willing, the old interests will come back. Not all rural schools are adapted to gardening, but many of the most successful school gardens are raised at the homes of the children.

There is no higher or more inspiring opportunity for a genuine teacher than to lead some children in the preparation and the planting of a piece of ground, be it large or small, and in the finding out about the plants and the insects that come of the venture day by day. There is no finer enterprise for a group of young people to engage in, under the inspiration of a genuine teacher, than to rent a bit of ground, to prepare it, plant it, care for it, market its product, keeping strict account of every step. That is experience; it is real life.

Most of the things we now teach would group themselves about it and grow out of it—arithmetic, bookkeeping, nature study and science. And let us remember that the thing does not even need to be a commercial success in order to be successful educationally. I take it that there is not a person within these walls who has succeeded with every job he tackled. Failure is as natural as success—probably more so. If the bugs get away with the crop—if neglect of a certain point cuts out the profit—if the season was unfavorable—if the frost came too

late—was the enterprise then destitute of value, and a fair mark for clumsy and thoughtless wit? By no means. It is real life, and it is doing the work it set out to do, no matter whether the actual returns were large or small.

It is the experience of other states that the most efficient approach to agriculture is by the organization of boys' and girls' agricultural clubs. These are formed for some specific and tangible purpose, as a competition under certain rules in the growing of wheat, or potatoes, or cotton, the raising of poultry or gardens, the baking of bread, the canning of fruit.

New York is the pioneer. Under the direction of Cornell University this state began work in 1898. It now has a membership of 75,000 boys and girls in its clubs, and has for its official organ the Cornell Rural School Leaflet, that goes to 7,000 teachers. Nebraska began this work in 1905, devoting its chief energy to the growing and the cooking of corn, under directions and recipes sent from the State University. In the fall they have local prize-winning contests in the township, then in the counties, and finally for the state, with a grand "corn banquet" bringing together 2,000 to 3,000 boys and girls from all over the commonwealth. The county superintendents of Winnebago County, Illinois, and Keokuk County, Iowa, have made national reputations in this work. Texas and Georgia are at it, too, and more than twenty other states.

An agricultural club may be organized in a single California school, and may do enthusiastic work. It is larger and better for the whole county to undertake it. Ambitious county superintendents of schools in the rural regions have an inspiring opportunity for usefulness in this field. There should be means provided for public displays of the results of competition. There should be some periodical to knit the organization together. There should be some leader who can travel about among the different clubs encouraging them and telling them what their fellows are doing.

Doubtless the time will come when the superintendents and teachers of agricultural counties will be chosen for enthusiasm and skill in this very kind of work. No superintendent in California has as yet taken it up. There is a fascinating field lying ready, a field for fame and glory, as well as for the highest service to the State.

Farmers' Bulletin No. 385 of the United States Department of Agriculture gives the latest and best information about the movement in a large way. The necessary leaders, the enthusiastic superintendents, the essential periodical and all else that is needed will come—will come when the demand is strong enough to warrant it.

This, perhaps, sufficiently covers my theme. I have tried to say very distinctly that we have little to hope for in introducing so great and live a thing as agriculture to our boys and girls in the way we would do with a new grammar or a revised arithmetic. I have tried to remark very hopefully that in fostering such different things as school gardens, agricultural clubs, and taking part in the nearest industry, we shall be laying a foundation in the body politic for the structure in the schools that we would build. I shall try to come to a full stop by pledging you my best efforts during my life in the future to bring this thing about; for the reason that it seems to me the most important thing to-day for the schools of California to grasp.

IRRIGATION THE BASIS AND THE MEASURE OF THE PRESENT AGRICULTURAL GROWTH OF CALIFORNIA.

By FRANK ADAMS, In Charge of Irrigation Investigations in California, Office of Experiment Stations, United States Department of Agriculture.

California is now undergoing the most rapid agricultural growth in her history. The dream of those who have seen all of the broad acres of the great valley yielding back to Nature full annual recompense for the rich endowment of soil and water and sunshine she has showered on this favored land is coming true. And the significant fact about this growth is that, in the aggregate, irrigation is both its basis and its measure.

During the past quarter of a century the increase in the area of cropped lands in California north of Tehachapi, which embraces the great bulk of the area of the State, has been relatively small. Yet the number of farms and the number of farmers have grown, especially during the past seven or eight years, in an almost unprecedented manner. One has not far to look to see that the beginning of this breaking up of the old grain estates of the seventies could not have come about without water to make their diversified culture in 40 and 80-acre holdings possible. Neither does one fail to note that the magnificent agricultural increase south of Tehachapi during the past decade has also been due to irrigation.

To imply, however, that California is now experiencing a great agricultural awakening due to irrigation does not mean that rapid growth was not made and that wonderful things were not accomplished during the first half-century of the State's occupancy by Americans. No amount of pen-picture writing could minimize the achievements of California farmers or discolor the romance of California agriculture prior to 1900. Progress blazed its way to accomplishments that commanded the respect and admiration of people everywhere. Irrigation in the south made a garden of a desert. To the extent that it was absolutely necessary in the north, it accomplished the same result in a less degree, and where it was not absolutely necessary the grainfields and orchards and vineyards in many cases made their owners wealthy. But within ten years the northern farmers and landowners have come to understand that "sky farming" is not the best farming, even in northern California, and that the best success in agriculture can only come with the small intensely cultivated and irrigated farm.

THE IRRIGABLE AND IRRIGATED AREAS.

About 60 per cent of California is taken up with the high Sierra, Coast Range, and desert mountains, leaving 40 per cent, or about forty million acres below 3,500 feet elevation, devoted to the growth of agricultural products of one kind or other or to grazing. Of this great

area about fifteen million acres are valley lands and largely irrigable. Some of the higher mountain land is also irrigable, and quite a little of it is irrigated. In various irrigable sections of the State, the soil, moisture, temperature, and crop conditions are about as diverse as can be found anywhere in this country.

In the northeastern mountain valleys of Modoc, Lassen, and Plumas counties the elevation ranges from 4,000 to 5,000 feet and the climate resembles that of portions of the Rocky Mountains, with a short growing season and winter temperatures frequently below zero. The other extreme is Imperial Valley, at the southeastern corner, where the land lies lower than the sea, and temperatures are the highest to be found in the entire West. Despite these great differences, irrigation is as necessary to full production in the northern counties as at Imperial. The difference is merely in the degree of that necessity; at Imperial no beneficial growth whatever is possible without water, while in Modoc, Lassen, and Plumas counties irrigation makes at least two blades of alfalfa grow where only one blade grew before.

In the great interior valley, with ten million acres of irrigable land and less than one fifth of it irrigated, the relative necessity for irrigation to produce crops decreases from south to north, yet, following the same reasoning that is applied above to the northeastern and southeastern corners of the State, its absolute necessity for full production is as certain in the Sacramento as in the San Joaquin. And as already indicated, it is to the final appreciation of this truth that the present great agricultural development in California is due.

Along the coast and in the smaller interior valleys of the western side of the State, the amount of water it is necessary to apply artificially to keep the amount of moisture required by crops available in the soil when needed also decreases from south to north. Directly on the coast north of San Francisco no irrigation is now practiced. In Russian River, Sonoma, and Napa valleys, lying between the northern coast and Sacramento Valley, but little water is used, although those connected with the irrigation work of the Department of Agriculture believe that all that is available might be applied with much benefit, and experiments to demonstrate this are already under way.

In the coastal regions south of San Francisco neither the necessity for irrigation nor the extent to which the available water supply is applied increases very rapidly until San Luis Obispo is reached. In Santa Clara Valley, however, which is considerably north of San Luis Obispo, the time has long passed when orchardists expect a full yield without irrigation, and in San Benito and Monterey counties, also north of San Luis Obispo, the best farmers are the irrigation farmers. But it is in the southern coastal counties of Los Angeles, San Bernardino, Riverside, Imperial, Orange, and San Diego that most dependence is placed on irrigation water and the greatest wonders have been worked by its use.

THE IRRIGATION STORY TOLD BY THE POPULATION CENSUS.

In coöperation with the Office of Experiment Stations, the Bureau of the Census is now engaged in taking the irrigation census of California, simultaneously with the other states. When this census is complete and the results are published, just what part irrigation is playing in

the agricultural growth of California will be fully and accurately stated. Fortunately, however, we do not need to await the completion of this irrigation census to ascertain what that part is in a general way; it is already clear from the census of population recently announced for California by counties. Its brief but pointed story is this: outside of a few counties containing large urban, suburban, or transient populations, the high gains in population in California from 1900 to 1910 were all made in agricultural counties practicing irrigation.

Outside of Los Angeles County, which contains twenty-nine incorporated cities besides Los Angeles, the biggest gain made by any county was in Stanislaus. No more completely rural county than Stanislaus County is to be found in California, and there is no county, barring Imperial County, in which irrigation is more wholly responsible for growth than it is there. The increase was 136.7 per cent. The irrigated lands in this county are almost wholly in Modesto and Turlock irrigation districts, the latter, however, extending for a short distance into Merced County. In 1900 the approximate population in Modesto Irrigation District, which included the city of Modesto with 2024 people, was 3,000; in 1910 it was 7,500, or an increase of 150 per cent. The population in Turlock Irrigation District ten years ago was only 925; it is now 8,000, or more than eight and one half times the population in 1900.

In 1904 a canal was taken out of Feather River to irrigate eventually 80,000 to 200,000 acres of former dry-farmed grain land, largely in Butte County. There are now some 20,000 acres irrigated in Butte County by this canal alone, and this is not the only system that is supplying water for irrigation in this county that was not in existence ten years ago. The increase in the population of Butte County was 59.4 per cent. The increase in Fresno County was 99.5 per cent, in Kings County 64.4 per cent, in Merced County the same, in Orange County 74.8 per cent, in Riverside County 93.9 per cent, in San Bernardino County 103 per cent, in San Diego County 75.8 per cent in Tulare County 93.4 per cent. In all of these counties the irrigated areas have been largely increased since 1900, and in none of them could there have been nearly such large additions of population without such increase. In other counties, as for instance Glenn and Colusa, irrigation works not fairly under way when the population census was taken are already transforming old grain-farming villages into thriving modern towns.

So it is plain that where water is, people go, and that one who would be a part of the present rapid agricultural growth of California must be an irrigator, either to supply artificially all of the water his crops need, or to insure that there shall be no deficiency when rainfall fails to meet the natural demands.

WHAT IRRIGATION MEANS TO THE FARMER.

For ten years the Office of Experiment Stations of the United States Department of Agriculture, acting through its irrigation investigations, has been studying the needs of irrigators in California. Most of the time its work has been carried on in cooperation with the State of California, formerly through the State Board of Examiners, but recently through the Department of Engineering. During all of the time aid

has also been freely extended by the College of Agriculture of the University of California. The great extent of California and the varied conditions of its climate and soil and water have made difficult the choice of work to do, considering the limited funds available. The chief work accomplished has been in studies of water-right conditions and needs, duty of water, methods of preparing land for irrigation and of applying water, the determination and prevention of seepage, percolation, and evaporation losses in transit or in application, organization and management of irrigation enterprises and delivery of water to users, pumping for irrigation, and drainage of irrigated lands. Reports covering all of these subjects have been published from time to time and quite largely distributed among the farmers of the State. In addition, special studies of irrigation practice covering particular crops, and also special localities, have been made. Incidentally, something of an insight has been obtained into what irrigation means to the farmer and the extent to which he will sometimes go to obtain a water supply.

In the first place, because irrigation farming in California is as a rule very profitable, it must not be supposed that every irrigated farm in California pays. Irrigated farms in California are not unlike irrigated farms in other places. The irrigation farmer who is not both a good agriculturist and a good business man, who tries to work poor or water-logged land, to grow profitably unprofitable crops, or fails to use water economically, and in the quantity and the manner and at the time needed, is as apt to fail as would be a poor farmer on unirrigated land. In other words, irrigation is not a magical wand whose mere touch makes all land and all crops blossom into a bountiful harvest. It is but one of the many important agencies at the command of him who would make the best success out of farming, and the irrigation must be practiced both carefully and intelligently.

For the man or woman of moderate means it has long been conceded that the ideal crop with which to set up irrigation farming in the West is alfalfa, and with this crop irrigation usually means everything. Exceptions to this are found only on river bottoms and where the ground water level is high enough to carry moisture to the alfalfa roots by capillarity. How much money return a farmer can get from irrigated alfalfa depends on the length of the growing season, of course assuming favorable soil and water conditions. In the northeastern counties of California where the season is comparatively short it is usual to expect one good crop of about two tons per acre and pasture on the unirrigated bottom lands and two good crops and pasture when the land is watered. On the experimental irrigation plat maintained on the University farm at Davis under coöperative agreement between the Office of Experiment Stations and the University of California, six cuttings were taken from the land in 1900, yielding from 4.08 to 8.45 tons per acre, depending upon the amount of water received by irrigation. Irrigated alfalfa fed to dairy cows in Stanislaus County in 1910 raised that county from fourth to first in the list of dairy producing counties in California. In 1910, the second year after planting, a progressive farmer of Porterville harvested 950 tons of alfalfa from 145 acres of land, making the average yield substantially 6.5 tons per acre. At Pomona all alfalfa grown is irrigated with water pumped from depths of 30 to 100 feet and yields six or seven cuttings of from 1 to

1½ tons each per acre per year. In Imperial Valley irrigated alfalfa yields eight or nine cuttings of a ton to the cutting each year per acre.

The above are fair statements of what irrigation means to the alfalfa farmer in typical parts of the State. But while irrigated alfalfa is always a safe crop, whether sold as hay, as beef, as alfalfa seed, or as butter fat, alfalfa farming will not satisfy everybody as a permanent occupation. Fortunately, the range of crops whose profitable production proper irrigation makes certain in California is almost unlimited. While nearly all of these crops are profitably grown in one section or another of the State without irrigation, although few of them are so grown south of Tehachapi, the assurance the irrigation farmer has that the summer drought will not leave him without a harvest and the greater productiveness and diversity irrigation makes possible give to irrigation farming a stability that is exceeded in no other industry. Up to 1898 practically no orchards were irrigated in the Santa Clara Valley of Santa Clara County. When the Office of Experiment Stations in 1904 made an investigation of irrigation in that valley a majority of the orchardists were found to count on irrigation as they counted on cultivation. When the farmers of the lower San Joaquin and the Sacramento valleys commenced about six years ago to cease the old unprofitable summer-fallow grain farming, they saw their land commence to double and even quadruple in value as measured by the actual annual income from it. Ten years ago land in the thermal belt about Porterville and Lindsay that was not paying a fair interest on over \$50 per acre when farmed to grain is now selling in bearing orange and lemon orchards for from \$500 to \$1,000 and more an acre, and the orchardists of that section have sunk a thousand wells from 100 to 200 feet deep to supply the water that has made their present culture possible. In 1900 Imperial Valley was an uninhabited desert. To-day, due to irrigation, it is doing some of the biggest agricultural things in the West. In the immediate vicinity of Pomona 250 pumping plants, some of them lifting water 400 feet, are in almost continuous operation many months each year supplying water from the various cienagas for the irrigation of orchards and alfalfa fields at an average annual cost of about \$18; yet what irrigation means to the people about Pomona, as measured by the expense to which they will go to get it, is but what it means to thousands of others at Redlands, Riverside, San Diego, San Fernando, and the other attractive communities of the south. Even now the city of Los Angeles is preparing to supply water from its twenty-five million dollar Owens River aqueduct to 135,000 acres of land contiguous to the city, charging some such bonus as \$50 per acre for the right to receive the water and \$10 per acre per annum, which is considerably lower than the present prevailing rate, for its use.

There is no occasion, however, for multiplying examples of what irrigation means to the California farmer. The story is really as old as irrigation itself in this State, and has been told and retold almost each succeeding year. It may be interesting, however, to conclude with a brief statement of what an irrigated farm in California costs.

WHAT AN IRRIGATED FARM IN CALIFORNIA COSTS.

For the intending settler, unfamiliar with irrigation, it may be in place to say that while irrigation farming is not sufficiently different from other farming to require any extraordinary skill or means, failure sometimes results from both lack of acquaintance with irrigation practice and lack of means to apply to the knowledge possessed. To the settler anxious to learn, ample information as to the best way to proceed in the settlement of an irrigated farm is available in the experience of irrigators already on the ground, and in the practical bulletins of the United States Department of Agriculture and of the different state agricultural experiment stations. The Office of Experiment Stations of the Department of Agriculture, for instance, has already issued a bulletin containing practical information for beginners in irrigation, and a series of manuals covering the irrigation of the chief staple irrigated crops, all of which are given freely; also, specific inquiries addressed to the Department of Agriculture or the state experiment stations are always answered to the best ability of those receiving them. The cost of an irrigated farm and the amount needed to bring it to the point of supporting the farmer, which cost, by the way, is quite apt to be less than the cost of an unirrigated farm in some sections of the east, are, however, not always made duly clear.

In the first place, in addition to his land, which in its raw state may cost from nothing to \$150, the settler must be secure in an ample water right. On the irrigation projects of the Reclamation Service, the water right is paid for in ten equal annual installments, and the land is either taken up under the government land laws or purchased from private holders. The installment plan of payment is also frequently adopted on private projects, but the water is usually sold with the land. In irrigation districts the water is part of the land and can not be sold separately. In the coöperative or mutual irrigation associations, which predominate in the south particularly, a share of stock in the water company carries a pro rata share of the water carried. Water aside from land costs from \$10 in some sections of the north, where water is used chiefly for alfalfa or grain, to \$200 an acre in the orange and lemon orchards of Riverside and San Diego, with annual maintenance and operation charges to be added, in some cases whether water is used or not. Land with water costs from a minimum of about \$40 per acre in some of the mountain valleys to a usual maximum of about \$250, depending both on the location and the cost of providing the water supply. Good land at \$100 to \$125 per acre, with a safe water right and under a well managed system, is perhaps a fair average for the irrigated lands being placed on the market in the interior valleys, although some land is being sold at double that figure. Even more important than the cost of a water right, however, an intending settler should satisfy himself by thorough investigation that the water right of the seller is clear and certain, that the quantity of water he provides is ample for the needs of crops and can be supplied, and finally, that the seller is financially responsible for and capable of living up to the contract he makes. If these matters are overlooked, irrigation by the newcomer may prove disastrous.

After purchasing his land and water the new settler is met with the practical questions of irrigation. First, he will need to prepare his land to receive water, which is neither a difficult nor an uncertain task. The practical bulletins already referred to will help him in this. But he must make provision for spending from \$5 to \$15 or \$20 per acre, largely in his own labor, in doing this. The main thing is to be sure that the best method is chosen for conditions present, and then that the work is done well. Otherwise the annual loss due to improper preparation in the first instance will soon eat up the saving in the initial cost of a poor job. In addition to preparing his land to receive water, the settler will need to lay out his farm distributaries, the cost of which, however, is included in the figures above. This is a matter that should be carefully considered by irrigation companies selling land and water, although usually, and sometimes unfortunately, the settler is left to shift for himself in this regard. Here, again, the bulletins of the federal and state agricultural departments will be of service to those who seek their aid.

The costs of preparing land given above are for the usual conditions with unlined surface distributaries, yet it may not be amiss to state that orchardists about Pomona are in some cases spending as high as \$100 per acre to prepare their land for planting, and throughout the citrus sections the usual practice is to use the more or less expensive underground distributaries.

Fortunately for the settler on irrigated land, the entire cost of an irrigated farm does not need to be met at the start. As the land and water are usually sold on installments, the main burden comes in providing the other accessories necessary. Few, if any, settlers expect to irrigate their entire holdings the first year, so that the cost of preparing some of the land for irrigation and the deferred payments on the land and water right can be met at first in part, and after a few years wholly from the income produced by the land. A settler, with a family who has less than \$1,000 has little chance of making a fair success on most of the projects, although there can probably be found many instances in which success has been attained under such conditions. A modest start on a 40-acre tract to be devoted largely to alfalfa can usually be made with from \$1,500 to \$2,000 cash. Three thousand to four thousand dollars, however, should carry the enterprise through with fair comfort, although such an amount should not be counted on to provide a full equipment at the start. The agricultural manager of one of the largest land and irrigation companies now developing irrigated lands in California states that the average prospective settler of moderate means on a 40-acre tract under his project figures that about \$6,600 is necessary to make the first payment of \$600 on the land costing with water \$125 an acre, provide a house costing \$1,200, barn and outbuildings costing \$600, horses, machinery, and other equipment costing \$1,200, cows and other live stock costing \$1,500, with \$1,500 left for miscellaneous expenses. Yet it is fair to say that a farmer under this same project who started with only \$1,000 cash recently received the prize for the best results obtained on a small irrigated farm.

AGRICULTURE IN CALIFORNIA.

The following article appeared in the San Francisco *Chronicle* of December 16, 1910, and as it bears so directly on the importance of sustaining the agricultural interests of the State, we deem it worthy a place in this report: "The discussion of the subject of state aid to agriculture, which was begun in the Commonwealth Club the other night, ought to lead, in the end, to very useful results. The preliminary discussion was based on a paper by A. J. Pillsbury, whose experience as the secretary of the State Board of Examiners had made him very familiar with what this State pays out in aid of agriculture, and what it gets for its expenditure.

It is significant of the absorption in the obvious, and the immediate, of even such excellent citizens as those who compose the Commonwealth Club, that the meeting of not more than fifty was much the smallest in recent years, and less than half the number which would have turned out to discuss an amendment to the charter of this city, and probably not a quarter so many as will be present next month to hear the flighty and irreverent of the membership make fun of their wise and sedate officials.

And yet the comparatively petty interests of this municipality are of the most trifling importance even to the inhabitants of this municipality as compared with deliberations which may affect the output of our soils, our mines, our forests, and our waters, without which San Francisco would be nothing, but a transfer point.

In all countries, and especially in the United States, public funds are used on a great scale in aid of farmers, as they are used in aid of no other class of people.

At bottom this is not because the community cares more about farmers than any other class of citizens, but because the existence of all other industries depends upon the exploitation of our natural resources, of which those of the soil are the most important and most essential.

It is not necessary to assume that the pressure of population, on subsistence, is already so pressing as to make State aid to agriculture imperative, lest some may starve. It is sufficient to realize that the greater the number of farmers and the greater the yield of the soils, the greater, and more prosperous, will be the cities whose inhabitants trade in those products.

There is a feeling, among some, that there has been waste in this State, connected with the expenditure of the sums appropriated in aid of agriculture. The object of the investigation, just begun, by the Commonwealth Club is to ascertain whether or not there is foundation for such belief, and if so, to suggest the remedy."

ALFALFA GROWING IN CALIFORNIA.

By REV. D. EDMISTON.

[This article is from a former report of the California State Agricultural Society, and is republished this year in deference to a constant and increasing demand for information on this subject.]

Were I called upon to express an opinion as to what single product of the soil would probably assume the greatest importance in our State within the next century, I would not hesitate to say alfalfa. As a forage plant for general use, as far as I know, it has no equal in value. This may be said not only in regard to its enormous productiveness, but as well in regard to its excellence as a feed, particularly for horses and cattle. For teams doing ordinary work on the farm, and for milch cows, it answers the purpose of both hay and grain. I feed no grain to my teams, and they not only stand work well, but they keep in good condition and in good flesh.

With our almost perpetual summer and with soil specially adapted to its growth, who can estimate the extent to which its production may be pushed in almost every part of our State? And who in imagination can look forward to the middle of the twentieth century and contemplate the vast number of profitable dairies, the fat beef cattle and fine horses raised on alfalfa, either in pastures or after made into hay, without pleasure and gratitude to the Bountiful Giver of so rich a heritage?

REQUIREMENTS.

But I am reminded that alfalfa can be successfully grown only where water for irrigation is abundant. However, there are occasional tracts of moist land where it does fairly well, though its cultivation on such land is attended with difficulties unknown on land which must be irrigated. The busy gopher works three hundred and sixty-five days in the year. And there are grasses, particularly Bermuda grass, which spread on such land with great rapidity and in a few years destroy the alfalfa. In making such large claims as to the extent and importance which alfalfa culture is destined to assume in the near future, I am met by the objection that the scarcity of water will for all time be an insuperable difficulty in the way. It is true that in many places water can only be obtained at great cost of capital and labor. Nevertheless, we can not doubt but that there are millions of acres of choice lands suitable for the purpose now lying waste which will be provided with water long before the middle of the twentieth century. It is only a question of capital and labor collecting and saving the enormous precipitation in our mountain districts. The rich valleys and plains extending from the southeast to the northwest in an unbroken chain for eight hundred miles were not planned by the Great Architect to remain forever waste. Whoever thinks so has studied the greatness of our State to little purpose.

SUITABLE LAND.

In southern California alfalfa will do fairly well on almost any land suitable for grain growing or orchard purposes where water can be secured in abundance for irrigation. And as a rule every farmer and orchardist who has such land will find it to his interests to grow a sufficiency for his teams and a cow or two. But it should be understood that there is a great difference in the adaptability of land, even in the same neighborhood, to alfalfa growing. And one who has chosen this industry as a prominent branch of his business should carefully select his location, as success or failure may hinge on the choice made. A porous subsoil which will take water freely can scarcely fail to give large crops if properly irrigated. There is ample fertility in almost any of our mesa lands to produce well if the roots can freely penetrate the subsoil. But there are tracts of land with fine surface soil which can not be made to produce heavy crops, simply because neither the water nor the roots can penetrate the underlying hardpan or tough clay subsoil. I have had some unpleasant experience in this direction, against which I would guard the inexperienced. In selecting land for this purpose one should not take surface appearances. He should dig down and find out what is under the surface, else he may be deceived.

PREPARING THE LAND.

Burn or remove all weeds and rubbish before plowing. If there are small mounds or hillocks which need to be removed with the scraper, it is much easier to do it before plowing the whole surface, as the low places, where the dirt should be dumped, may then be readily seen. And whatever leveling is needed should be done with reference to the location of the irrigating ditches. It is very important that the general lay of the land be accurately ascertained, either by a competent engineer or by the actual running of water. After the ground has been leveled as thoroughly as possible with the scraper, it should be well plowed and the surface carefully pulverized. All dead furrows should be filled and some suitable instrument used to make the surface level and smooth. A piece of square timber, twenty-five or thirty feet long, weighted down so as to make a load for two teams, one hitched at each end, and drawing it sidewise over the land, will level the surface as well or better than any other contrivance I have seen at work. And, as this is done rapidly, it is well to go over the land two or three times, changing the direction each time. This will put the ground in fine shape for irrigating, if the general level has been secured, and it will somewhat pack the loose ground and thus prevent the young alfalfa plants from drying out if the north wind should blow, and enable the roots more readily to fasten in the soil.

LAYING OFF FOR IRRIGATION.

For convenience and economy in irrigating, a ten-acre lot should be divided into three or four equal blocks. I have had considerable experience with five-acre blocks (twenty by forty rods); but I have always found them too wide for the equal and easy distribution of water. The water would stand over parts of the block longer than necessary before it could be forced over other parts. Consequently, the water is not equally distributed, some parts receiving more than is necessary and other parts not receiving enough.

AMOUNT OF SEED REQUIRED.

The amount of seed sown is not a matter of so great importance as the manner of sowing and covering. Nothing heavier than a horse rake, lightly run over the ground, should be used. A brush, or a considerable bunch of brush, fastened together, answers the purpose well. All that is wanted is to imbed the seed somewhat in the fine dirt on the immediate surface. It does not matter much if much of the seed remains in sight. Indeed, if the sowing is followed by a heavy rain or by flooding the ground, so as to insure a moist surface for four or five days, it is all right without any covering at all. Two years ago I sowed a block, and when about half of it was lightly covered a heavy rain drove us in. I never had a finer stand, the uncovered part being just as good as that which had been covered. Thus treated, ten pounds to the acre will make a very thick stand—even more than is needed. I once sowed ten pounds to the acre on one half a ten-acre tract and seven pounds per acre on the other half; and after it came up no one could have told the difference. It was all abundantly thick. Then, if you cover very lightly as above, or see that the ground is wet by rain or by flooding, ten pounds of seed per acre is the greatest plenty. But if one insists on covering with a heavy harrow, or an ordinary cultivator, as grain is covered, a heavy investment in seed will be required, as a very small part of the seed sown will ever send a plant to the surface.

CUTTING AND IRRIGATING.

After sowing and seeing that the ground is properly wet, nothing further will be required until the ground needs irrigation. But when the alfalfa gets six or eight inches high it should be mowed. This will check the weeds and cause the alfalfa to branch and to grow with much greater vigor than if left uncut. Through the first season the ground should have a good flooding after each cutting, and oftener if needed. It will grow all the faster if flooded once in every three or four weeks. If sown in the winter or early spring, the first season ought to make three or four tons per acre, if properly cared for. However, the first season's crop will vary greatly on different soils—much more than in following years.

MAKING HAY.

It will be well to begin cutting quite early in the spring, especially if one has a good deal to cut, but no definite date can be given, as the seasons vary greatly. It is a mistake to wait for the alfalfa to become large and show signs of blossoming. By cutting the early growth about the time the warm spring days begin to come, though it may make only a light crop, the new growth will start with vigor, and at the end of a month, when ready to cut again, you will probably have a ton per acre more than if the two cuttings had been thrown into one, and the hay will be of much better quality.

There is another important advantage in early cutting. Foxtail grass often spoils the first cutting of hay for horses. But if cut before the grass head begins to harden it is entirely harmless, as it will not fasten in a horse's mouth at this stage.

CONDITION AT CUTTING.

Throughout the season great care should be taken to cut promptly when the alfalfa has reached a proper state for making first-class hay. Of course, there are different opinions as to what the "proper state" is. I can only give my own opinion and the reason for it. And that opinion is that it should be cut before the stalk begins to harden, as it always does as the buds mature and the blossoms begin to open. If it stands longer, the quality of the hay deteriorates much more than the additional growth can compensate for. But there are those who want it to stand longer. They say that it makes better feed and has more substance in it. This is true, if woody substance is desired, but it is not true if nutriment is the object in view, if we may rely upon the tables and statements made in Farmers' Bulletin No. 31 of the United States Department of Agriculture. On page 18 it is said: "The percentage of nitrogenous compounds in the plant varies considerably, the maximum being in the early stages of its growth and the minimum about the time the seed commences to ripen. Hence, hay cut early, especially before the plant begins to bloom, is more nutritious than that cut after it has begun to bloom." The writer gives the analyses of hay made at four different periods in the growth of the plant, showing that the statements just made are correct from a scientific point of view. And I feel sure that experience will lead any careful observer to the same conclusions.

LOCAL EXPERIMENTS.

About two months ago, after feeding my cow for some time on hay which had been cut when in bloom, I changed to hay cut before it began to bloom, and at once her flow of milk increased at least one fourth. And my neighbor, Mr. H. D. Noland, tells me that in the same way the weight of milk given by his herd had been very greatly increased just as soon as changed from hay made in the ordinary way to that made from tender, young alfalfa. Another point in favor of early cutting is worth considering. Cows will then eat the stalks clean, wasting nothing. But if it stands until in bloom, when the stalks become woody, they can not be induced to eat them, often wasting one fourth of the weight. Hence, I am fully convinced that one making hay for his own use will find it decidedly to his advantage to cut before stalks begin to harden. And in making hay for sale it will be just as much advantage to his customers, and will be better all around, if they can be induced to pay a little more for such hay to make up for the loss in weight in cutting before it is fully grown.

SUGGESTIONS.

I would never cut at one time more than can be raked and put in cocks in the forenoon of the next day, if it is in the hot and dry summer months, or in the forenoon of the first day after it is sufficiently cured. However, the very early or very late cuttings, when the only difficulty is to get it dry enough to keep, may be handled in the afternoon without breaking the leaves and losing them. But through much of the season alfalfa hay should never be touched in the afternoon, or after the leaves begin to break.

One should never cut and put in the cock forty or fifty acres, as I have often seen done, before beginning to haul it in. Hay thus treated is scarcely worth more than half price, to say nothing of the delay of one week, or perhaps even two weeks, in irrigation which this method requires. One can not afford this loss. When I have sixty or seventy acres to handle, I generally cut about five acres in the morning and put in the cock the same amount cut before, and come as near as I can to hauling the hay from five acres each day. But I generally find it necessary to stop cutting a day or two each week to catch up with the hauling. When the weather is very dry and hot we think it pays to go to the field as soon as it is light, and lay off for the remainder of the day when the hay becomes too dry.

We find it a great convenience and economy of time and labor to have large and convenient racks on our hay wagons. We use flat racks, eight by sixteen feet. On one of these we can, without high pitching, conveniently put a load of two tons, and without any danger of its slipping off on sloping ground. A two-ton load on such a rack is about twelve feet wide and eighteen feet long, and no higher than a ton load on the kind of racks I often see used. And the average team can haul two tons on our hard roads easily, and it saves much time when one is hauling three or four miles.

ESTIMATING ALFALFA HAY IN STACK.

Age of stack.	Cubic feet for a ton.
30 days -----	8 feet cube, or 512 cubic feet.
6 months -----	7 $\frac{1}{2}$ feet cube, or 422 cubic feet.
Old, fully settled -----	7 feet cube, or 343 cubic feet.

Sometimes in very large stacks or mows a 6 foot cube, of 216 cubic feet.

“There are different methods of measuring hay in the stack, depending upon the shape of the rick and also upon its size. With a long rick the usual method is to throw a line over the stack, measuring the distance in feet from the bottom of the stack on one side to the bottom of the other; add to this the average width of the stack in feet, divide this sum by four, which gives one side of the square—and multiply the quotient by itself and this product by the length of the stack in feet. This will give the number of cubic feet in the stack, which may be divided by 512, 422, or 343, as may be decided upon, in order to find the number of tons.

“For small, low ricks the rule is to subtract the width from the over, divide by two, multiply by the width and multiply the product by the length, dividing the result by the number of cubic feet in a ton.

“There is no established rule for measuring round stacks, but this one will approximate the contents of a stack of ordinary conical form: Find the circumference at or about the base or bulge at a height that will average the base from there to the ground; find the vertical height of the measured circumference from the ground and the slant height from the measured circumference to the top of the stack, taking all measurements in feet. Multiply the circumference by itself, divide by 100 and multiply by eight, then multiply the result by the height of the base, plus one third of the slant height of top. The hay in a round stack is usually less compact than in a rectangular rick, hence a greater number of feet should be allowed for a ton—with well settled hay, probably 512 cubic feet.

“The rules given may also be used in measuring any kind of hay, straw, cane or kaffir fodder, but with cane or kaffir only approximate results may be secured by stack measurements, because fodder is apt to vary greatly in weight according to the moisture it contains.”



RESOURCES

OF THE

STATE OF CALIFORNIA.

(BY COUNTIES.)

ALAMEDA COUNTY.

Alameda County fronts on the bay of San Francisco for a distance of 38 miles, with an average width of 25 miles, extending to and beyond the summit of the Contra Costa hills, comprising numerous beautiful valleys, besides the broad Alameda Valley, which last is bounded by the waters of the bay on the one side and the Contra Costa hills on the other, and is one of the richest and most fertile valleys in the State. The principal stream is Alameda Creek. There are other creeks crossing the county and emptying into the bay, two of which furnish water for the city of Oakland. The country around Hayward is one of the great fruit-raising regions, many millions of pounds being shipped annually.

The soils immediately along the bay in Alameda Valley and the marshes formed by the overflow are heavy, but very fertile when reclaimed. Then comes a broad belt of rich, black adobe that is crossed by deposits of alluvium made by shifting channels of streams running down from the Coast Range. In the Niles region are lighter loams. About Livermore are uplands, bench, and valley lands. Between the latter two classes the variation in potash, lime, and phosphoric acid accounts for difference in grape crop. Mission San Jose is characterized by gravelly, upland, adobe soil, and was evidently chosen by the padres of the old Spanish mission for its exemption from frost, caused by its slight elevation above the surrounding valleys. The Pleasanton section consists of agricultural and grazing lands. The soil is a very rich sediment, producing hay, grain, potatoes, hops, and beets in abundance. At Alvarado the surrounding country is a fine farming and fruit region, and gardening and dairying are largely carried on. The fertile, alluvial soil is finely adapted to fruit-growing.

The average rainfall of the county is about 30 inches.

Alameda County was among the first to begin the planting of orchards and vineyards. The county is divisible into three sections—the cherry district, the apricot district, and the vineyard district.

From Oakland to Hayward is the home of the cherry, and in an ordinary year this crop is good for a profit of a quarter of a million dollars.

The apricot section includes all the region east and south of Hayward, but the center is at Niles. The Alameda apricot is high colored and the flavor exquisite. One of the most popular varieties, the Alameda Hemskirk, was originated here. The other varieties preferred are the Blenheim and the Moorpark. A first-class apricot orchard is easily worth \$500 per acre, and some could not be bought for \$750 or \$800. Apricot trees yield from twelve to twenty tons per acre, worth from \$20 to \$30 a ton. Thousands of car loads of apricots are shipped annually from this county.

While cherries and apricots are the king and queen of fruits, there are others which do well, among them being the Bartlett pear. The

plum is another fruit which thrives, and the smaller fruits and berries are profitably grown.

In Alameda County are the largest currant patches in the United States. The size of an average currant farm varies from twenty to forty acres. Local canneries pack a great number of cases of this fruit, and thousands of chests of currants are shipped away each year.

Almonds, chestnuts, English walnuts, pecans, beechnuts, and hazelnuts are extensively cultivated.

Alameda is *par excellence* a vegetable-producing county. It has led in this industry for a long time, and the area devoted to vegetables has been increasing at a rapid rate, since the profit in peas, potatoes, tomatoes, rhubarb, asparagus, and several other vegetables is large enough to tempt the owners of the best soil to go into the business.

There are 8,000 acres devoted to vegetables in the county, not including sugar beets, which would add 4,000 or 5,000 acres more.

Many acres in this county are planted to tomatoes, which prove to be a most profitable crop. It is not unusual to find 100 acres of tomatoes growing upon a single farm.

The potato crop is of increasing importance, since it has been found that there is good money in the big Burbank potatoes and other commercial varieties. The best soil will produce from 75 to 80 sacks to the acre, although record yields of 150 sacks have been produced.

The growing of peas for canning has assumed importance. The output of the San Leandro cannery, located in this county, has reached as high as 1,200 cases per day, and 3½ tons of peas have been grown upon a single acre.

One of the prosperous agricultural industries is the growing of rhubarb for the California and Eastern markets.

California was the first State in the Union to manufacture beet-sugar on a commercial scale. In Alameda County it has been manufactured for the past thirty-three years. Within her borders is located not only the pioneer beet-sugar factory of this country, but also one of the largest factories in the world. The annual production of beet-sugar in California exceeds that of any other state. Beets in Alameda County average over 14 per cent sugar of 88 per cent purity, and they yield an average of 15½ tons to the acre. The planting season extends from the first of February to the middle of May. This provides a long period of activity for the factory, which begins operations in August, and has continuously maturing crops of beets to handle.

The average annual output of salt recovered from San Francisco Bay, in Alameda County, is 100,000 tons, including both coarse and fine salt.

Oakland is the county seat, located on the bay opposite San Francisco, and has for its immediate neighbors the cities of Berkeley and Alameda. These three cities are very prosperous and have a rapidly increasing population.

The University of California is located near the city of Berkeley, and has an average attendance of 4,500 students.

STATISTICS OF ALAMEDA COUNTY, 1909-10.

General Statistics.

Area 840 square miles, or 537,600 acres.	
Number of farms	2,482
Number of acres assessed	537,600
Value of country real estate	\$13,228,625
Of improvements thereon	\$3,164,225
Of city and town lots	\$97,735,325
Of improvements thereon	\$59,453,450
Of personal property	\$21,715,497
Total value of all property	\$200,206,102
Expended on roads, last fiscal year	\$138,541
Expended for bridges, last fiscal year	\$178,822
Number of miles of public roads	850
Road levy per \$100, 1910	40c
Miles of street in town and city	450
Value of county buildings	\$825,000
Railroads, steam — miles, 200; assessed value	\$6,075,375
Railroads, electric — miles, 158; assessed value	\$5,198,900
Electric power plants — 5; assessed value	\$2,425,125
Electric power lines — miles, 100; assessed value	\$200,000

Cereal Products and Hay.

	Tons of 2,000 pounds.		
	Acres.	Bushels.	Value.
Wheat	1,350	2,083	\$122,530
Barley	8,750	11,655	437,062
Oats	2,575	2,624	131,200
Corn	485	1,284	38,520
Total cereals	13,160	17,646	\$729,362
	Acres.	Tons.	Value.
Alfalfa hay	710	3,895	\$46,740
Grain hay	55,001	73,652	1,238,910
Grass hay	24,750	.....	12,375
Total hay	80,461	77,547	\$1,348,025

Number of Fruit Trees and Vines.

	Bearing.	Non-bearing.	Total.
Apple	15,750	12,225	27,975
Apricot	75,016	27,775	102,791
Cherry	28,935	5,975	34,910
Fig	300	250	550
Lemon	750	350	1,100
Olive	4,675	2,775	7,450
Orange	1,200	521	12,171
Peach	12,575	10,125	42,700
Pear	19,775	9,995	29,770
Plum	9,980	6,770	34,450
Prune	103,000	30,125	133,125
Quince	395	100	495
Total fruit	272,351	106,986	427,187
Almond	10,195	25,000	35,195
Chestnut	72	21	93
Walnut	6,175	28,125	34,300
Total nut	16,442	53,146	69,588
Grapevines	2,175	150	2,325
Berries, acres	525	.....	525
Total	2,700	150	2,850

Wines, Brandies, Etc.

	Gallons.	Value.
Dry wines	3,250,000	\$812,500
Sweet wines	500,000	250,000
Beer (barrels)	200,000	2,400,000
Brandy	250,000	125,000
Vinegar	90,000	9,000
Carbonated and soda water .....	.....	551,115
Total .....	.....	\$4,147,615

Fish Industry.

	Value.
Oysters	\$150,000

Fruits, Vegetables, Etc.

	Total Production. Pounds.	Value.
Green—		
Apples	500,000	\$17,500
Apricots	3,750,795	93,779
Asparagus	2,465,125	246,512
Blackberries, crates ..	900	3,250
Beans	475,985	23,799
Beets, tons	50,000	250,000
Cabbage	6,145,000	40,725
Carrots	8,125,000	162,502
Celery	7,892,000	789,200
Cauliflower	850,850	42,542
Corn	2,248,000	56,200
Cucumbers	824,800	16,496
Currants	100,125	6,256
Cherries	896,600	44,830
Figs	15,000	1,500
Gooseberries	30,000	1,500
Grapes	21,175,125	423,502
Lemons (boxes)	625	1,875
Loganberries	125,000	6,250
Onions	3,750,125	75,002
Oranges (boxes)	895	4,475
Olives	225,125	8,879
Pears	975,995	29,280
Peaches	500,000	15,000
Peas	3,975,725	198,786
Pumpkins (tons)	5,000	25,000
Plums	495,750	24,787
Irish potatoes	18,250,125	365,002
Sweet potatoes	2,900,800	145,040
Prunes	2,575,000	128,750
Quinces	3,765	188
Raspberries	1,125	5,625
Strawberries	750,000	37,500
Tomatoes	18,834,115	376,682
Rhubarb	2,222,275	133,336
Squash	882,000	22,050
Walnuts	202,995	20,299
Total .....	.....	\$3,843,899

	Pounds.	Value.
Dried—		
Almonds	305,555	\$45,833
Apples	50,000	5,000
Apricots	500,000	25,000
Beans	295,750	7,872
Chestnuts	3,200	320
Onions	988,975	19,779
Pears	30,000	1,500
Peaches	200,000	20,000
Peas	145,625	14,562
Plums	375,225	37,522
Walnuts	45,965	7,166
Garlic	532,325	26,616
Vegetables in general .....	.....	100,000
Vegetable seeds .....	.....	75,000
Total .....	.....	\$386,170

	Cases.	Value.
Canned—		
Fruit and vegetables of all kinds	957,595	\$1,915,190

Dairy Industry.

	Production.	Value.
Fresh milk	8,125,275	\$1,625,055
Butter (pounds)	3,012,750	903,825
Cheese (pounds)	8,115	1,623
Total .....	.....	\$2,530,503

Poultry and Eggs.

	Dozen.	Value.
Chickens	20,750	\$124,500
Ducks	725	6,525
Geese	300	3,600
Turkeys	55,888	16,766
Eggs	1,675,125	753,706
Pigeons	1,500	5,400
Total .....	.....	\$910,497

STATISTICS OF ALAMEDA COUNTY, 1909-10—Continued.

Miscellaneous Products.		Value.
	Pounds.	
Honey and hives.....		\$2,250
Nursery stock, flowers, plants, etc.		500,000
Sugar beets (tons)....	35,000	175,000
Total		\$877,250

Live Stock Industry.		Value.
	Number.	
Cattle—Beef	5,275	\$211,000
Stock	13,000	390,000
Dairy Cows—Graded... ..	10,125	455,625
Guernsey	12	24,075
Herefords	110	
Holsteins	225	
Jersey	125	
Polled Angus	1	
Red Polled	12	
Shorthorns	50	
Calves	8,725	52,350
Swine	5,164	67,132
Horses—Thoroughbred ..	1,150	230,000
Standard-bred	875	87,500
Common	25,975	1,948,125
Colts	9,995	499,750
Jacks and jennies.....	6	1,800
Mules	295	58,000
Sheep	15,000	90,000
Lambs	11,225	39,287
Angora goats	175	1,750
Common goats	225	1,125
Total		\$4,157,519
Wool		226,000

Manufactories.		Value of Products.
	Number of Employees.	
Bookbinderies, job printing and lithographing..	680	\$2,250,175
Paper boxes	75	151,775
Wood boxes	105	280,125
Borax	50	900,000
Brick	310	1,750,125
Brooms	95	75,000
Caskets	30	110,000
Carriages and wagons...	75	275,125
Cotton, silk and jute...	610	2,003,750
Cigars	75	500,000
Clothings and caps.....	700	3,000,000
Coffee, spices, etc.....	145	450,150
Confectionery	585	1,755,550
Fertilizer	60	271,515
Bags, tents, and awnings	150	850,225
Electrical supplies	25	150,000
Flouring mills and health foods	805	1,277,775

Manufactories—Continued.		Value of Products.
	Number of Employees.	
Drugs	50	\$475,475
Drugs	50	475,475
Furniture	80	500,750
Inks	83	325,000
Jewelry and gold leaf...	25	150,000
Leather goods and gloves	260	710,115
Lime	3	2,500
Output of foundries, including products of iron and steel industries....	2,900	15,800,700
Malt	17	55,725
Matches	25	130,000
Meat products	610	
Hides		491,125
Lard		52,550
Meat packed		3,100,750
Tallow		35,115
Cocoanut and linseed oil.	55	575,000
Olive oil	25	50,000
Paints and oils, etc.....	302	1,885,850
Pickles and relishes, pickled olives	25	155,550
Iron pipe	15	50,000
Sewer pipe	150	750,000
Planing mills, sash and door factories	1,425	4,775,775
Potteries	49	501,115
Salt	200	500,795
Soap	50	300,000
Artificial stone, crushed rock, etc.	600	2,875,125
Wire	25	672,690
Knitted goods	100	511,115
Organs and pipes	6	105,000
Marble	7	50,000
Carbonic acid gas.....	50	205,000
Sal soda	10	132,000
Sugar, beet	230	700,000
Syrups and extracts	27	135,550
Spring beds	30	80,280
Tanneries	25	250,000
Rugs and carpets	45	101,975
Tin and galvanized iron.	61	427,750
Willow and wooden ware	32	55,550
Store and office furniture	60	502,175
Patent roofing	49	510,125
High explosives and fuses	120	756,000
Rubber and waterproof goods	60	175,125
Yeast	9	31,115
Iron pyrites	8	35,000
Total	12,428	\$55,636,755

Manufactured Output.		Value.
Unsegregated output		\$3,015,715

ALPINE COUNTY.

Alpine County is one of the unfortunate counties, as far as her means of communication with the other counties of the State is concerned. there being no public road maintained by her sister counties to her border, thereby rendering it necessary to turn to the state of Nevada for a route to safely reach the capital at Sacramento, or any other part of the State. This condition militates against the development of Alpine County's many natural resources, as intending investors or purchasers are not afforded a convenient route of reaching the county. This matter has been brought to the attention of many of the members of the present Legislature, and it is to be hoped that they will take some steps which will enable Alpine County to become a county of California commercially.

The resources of Alpine County are unlimited, especially in mineral, timber, and water power, the latter offering a field of immediate development to enterprising capital.

Ultimately Alpine County will be considered California's greatest summer recreation ground, which is yearly becoming more popular with those tourists who brave the poor conditions of the roads leading from the western slope.

STATISTICS OF ALPINE COUNTY, 1909-10.

General Statistics.			Cereal Products and Hay.			
Expended on roads, last fiscal year, approximately			Tons of 2,000 pounds.			
				Acres.	Tons.	Value.
Number of miles of public roads	110		Wheat	830	1,245	\$12,330
Road levy per \$100, 1910.....	35c		Barley	70	135	3,800
			Oats	100	150	4,000
Dairy Industry.						
	No. Production.	Value.	Total value			
Skimming stations: 23	59,000	\$18,880	\$20,130			
Live Stock Industry.						
	Number.	Value.				
Cattle—Beef	1,280	\$51,000	Alfalfa hay	650	2,000	\$14,000
Stock	3,200	64,000	Grain hay	30	50	500
Dairy Cows—Graded..	400	1,600	Grass hay	1,400	3,200	25,600
Calves	350	4,200	Poultry and Eggs.			
Swine	600	3,600			Dosen.	Value.
Wool (pounds)	90,000	10,800	Chickens		6,000	\$3,500
			Eggs		21,000	5,250
Most of the sheep that graze in the county are shorn in other counties.			Total value			
			\$8,750			

AMADOR COUNTY.

Amador adjoins El Dorado County on the south, Alpine on the west, Calaveras on the north, and Sacramento and San Joaquin counties on the east. It is inland and occupies the east central portion of the State. It has no navigable rivers. The Cosumne forms a part of its northern boundary and the Mokelumne forms its entire southern boundary. Both of the rivers are tributaries of the Sacramento. Varying, in the main, in altitude from 30 feet to 1,500 feet and in temperature from 30 degrees to 100 degrees Fahrenheit; having an average annual rainfall of 29 inches, and having land possessing every ingredient requisite in most productive soil, the county has never failed to produce a crop. There is no climatic condition of any portion of California, except the climate of the immediate seashore, but that may be found here. There is no product of any portion of the State but that may here be fostered. The greater portion of the county being a rolling or foothill region, is adapted to the cultivation of any kind of farm, of horticultural, or of viticultural product.

Grain, hay, spuds, the peach and the apple, and the raisin and the wine grape, can not be excelled elsewhere in flavor or in general appearance. In many parts of the western portion of the county, a great variety of vegetables is grown throughout the year.

Yielding (as the county does) an abundance of the best natural grasses, it offers inducements to stockmen, many of whom are awakening to a more full realization of the adaptability of this section to stockraising.

Distinctively the county is a region of mineral deposits. Besides what is used locally, two car loads and upwards of potter's clay and more than one car load of coal, are daily shipped from the county. We hope soon to have as large a shipment of fire brick. Silica is being shipped to outside markets. Other exports are lime rock, granite, marble, sandstone, greenstone, talc and copper.

The one resource, however, that is paramount, is gold from the quartz mines. Ten large quartz mines are at present operating on a most satisfactory basis. Our county is easily reached and is healthful. A miner here does not have to endure the cold of the Klondike nor the hardships of the Nevada mining districts. Everything is favorable to the operation of mines here. Well-constructed roads make the quartz zone accessible at any point. Wood and coal for fuel are at hand; fuel oil is brought by railroad immediately upon the great quartz zone—the famous "Mother Lode"—which traverses the county from southeast to northwest. Water supplied by canals leading from mountain lakes in the Sierra Nevada Mountains, is used for motive power and for irrigation and for domestic purposes as well.

Electric power is also available. The Pacific Gas and Electric Company of California has an electric plant located upon the Mokelumne River, six miles from Jackson, the county seat. This electric works has a capacity of 27,000 horsepower, which power can operate all of the machinery of Amador County for many years hence, and is at the same time sufficient for all other local purposes. Besides this, a large amount of power is supplied to the bay cities.

An estimate made from reports of cruisers, who have recently been over the timber belt, shows that there are in the county 10,000,000,000 feet of standing timber, most of which is sugar pine, yellow pine, spruce, fir, cedar, and different varieties of oak. Although not in such great abundance, there are many other kinds of timber.

The timber belt has from 1,000 feet to 4,000 feet greater altitude than the main mineral zone—the “Mother Lode”—which separates two regions of widely divergent interests. The resources of the western section are mill stuffs, products of the farm, the garden, etc., coal, pottery, fire brick, lime, and merchandise in general. The resources of the eastern region are lumber, round timber, lagging, shakes, shingles, charcoal, wood, marble, granite, talc, and mountain potatoes and apples that are unexcelled in appearance, flavor, and as keepers.

From these two sections solicitors, with their diversified products, come to the mines and towns along the “Mother Lode,” which provide a ready market.

Amador ought to be a county of magnificent homes. Nowhere can more beautiful and inspiring landscapes, nor balmier skies, nor purer water, nor a more equable climate be found. Every kind of the best building material is right on the ground. The best architects and builders are available.

Our schools, as good as the best of the kind, capably supervised, are of the primary and grammar grades. There is also one union high school.

Manufacturing and kindred pursuits, are making encouraging headway. We are watching with great interest the progress being made by the fire brick plant at Ione. The potteries near Carbondale are placing their products on the market. The breweries of Jackson and Sutter Creek hold their own in the open market. The several wineries do a thriving business. Two ice plants are taxed to their utmost capacity. The Amador County Steam Laundry provides employment for a great many. The local machine shops and foundry recognize no superior. The door and sash factory at Sutter Creek supplies the local demand in its line. All kinds of stone dressing is most capably and artistically done.

Mountain lakes and valleys and river canyons furnish abundant opportunity for those needing recreation, or for those that enjoy huntings and fishing. Mineral springs having medicinal properties that are prescribed in certain cases, are found in different parts of the county.

It seems that nature could not have done more in the preparation of an inland county—even the seashore is becoming more and more accessible by the shortening of distance through rapid transportation. From the main quartz zone of the county, San Francisco may now be reached in eight hours. In time this distance will be covered in five

hours. Then San Franciscans will come in greater numbers to enjoy with us this land of sunshine, fruits, and flowers, of mineral wealth, and countless opportunities for profitable and safe investment.

STATISTICS OF AMADOR COUNTY, 1909-10.

General Statistics.				Fruits, Vegetables, Etc.		
Area, 568 square miles.					Total Production.	
Number of farms.....	852				Pounds.	Value.
Number of acres assessed.....	370,924			Green—		
Value of country real estate....	\$3,086,408			Apples	429,540	\$8,590
Of improvements thereon.....	\$915,877			Apricots	406,000	8,120
Of city and town lots.....	\$301,240			Blackberries	6,000	500
Of improvements thereon	\$737,376			Beans	14,000	650
Of personal property	\$635,704			Beets	13,000	280
Total value of all property.....	\$5,875,535			Cabbage	22,000	440
Expended on roads, last fiscal year	\$22,000.			Celery	3,500	350
Expended for bridges, last fiscal year	\$7,500			Cauliflower	2,000	200
Road levy per \$100, 1910.....	30c			Corn	180,000	3,600
Railroads, steam—miles, 20; assessed value	\$2,628,212			Currants	400	40
Electric power plants—2; assessed value	\$223,500			Cherries		2,100
Electric power lines—miles, 52; assessed value	\$30,000			Figs		1,250
Number of acres irrigated.....	6,000			Gooseberries		20
Cereal Products and Hay.				Grapes		814
Tons of 2,000 pounds.				Loganberries	600	60
	Acres.	Tons.	Value.	Nectarines	25,500	1,300
Wheat	4,000	1,500	\$60,000	Onions	120,000	2,400
Barley	4,250	900	31,500	Oranges (boxes)	50	150
Oats	2,240	600	18,000	Olives	26,000	1,600
Corn	320	640	25,600	Pears	390,700	8,000
				Peaches	421,000	8,670
Total cereals ..	10,810	3,640	\$135,100	Peas	8,000	400
Alfalfa hay	1,200	6,150	\$92,250	Persimmons	500	25
Grain hay	4,200	9,400	132,720	Plums	73,000	1,500
Grass hay	1,200	1,200	13,200	Irish potatoes	875,000	1,520
Total hay	6,600	16,390	\$238,170	Sweet potatoes	1,000	20
Number of Fruit Trees and Vines.				Prunes	320,000	1,600
	Bearing.	Non-bearing.	Total.	Quinces	19,000	410
Apple	11,350	1,300	12,650	Raspberries	750	190
Apricot	2,915	112	3,027	Strawberries	4,000	600
Cherry	2,959	126	3,079	Tomatoes	3,600	100
Figs			1,250			
Lemon	65	10	75	Totals	11,344,740	\$154,955
Nectarine	1,052	10	1,062			
Olive	2,250	90	2,340	Dried—	Pounds.	Value.
Orange	1,200	185	1,385	Almonds	4,000	\$500
Peach	13,400	1,200	14,600	Apples	15,000	1,600
Pear	10,840	645	11,485	Beans	1,500	45
Plum	10,650	120	10,770	Chestnuts	12,500	1,525
Prune	14,106	15	14,750	Currants	1,500	150
Quince	740		755	Figs	1,000	60
Other kinds ..	125		125	Grapes	400	40
Total fruit..	74,481	4,517	78,998	Nectarines	2,000	200
Almond	5,565	780	6,345	Onions	112,000	2,250
Chestnut	2,125	10	2,135	Pears	320,000	2,750
Pecan	25		25	Peaches	27,000	2,200
Walnut	1,260	200	1,460	Plums	360,000	3,200
Other nuts ...	10		10	Prunes	127,500	7,700
Total nut... ..	8,985	990	9,975	Raisins	1,200	95
Grapevines ...	371,560	36,000	407,560	Walnuts	125,000	1,500
Berries, acres.	40		40			
Wines, Brandies, Etc.				Totals	386,100	\$23,835
	Gallons.	Value.				
Dry wines	175,000	\$4,375		Manufactories.		
Sweet wines	2,500	1,000			No. Employees.	Value of Products.
Beer (barrels)	5,400	43,200		Brick	1	25
Brandy	750	1,500		Carriages and wagons ..	2	8
Cider	150	50		Cement	25	\$125,000
Vinegar	4,000	1,000		Cigars	1	2
Number of wineries, 5; number of distilleries, 2; number of breweries, 2.				Coal	3	20
				Electrical supplies... ..	1	2
				Flouring mills	1	5
				Foundries and iron works ..	2	25
				Ice	3	10
				Lime	1	20
				Malt	2	10
				Meat products	6	18
				Hides		12,863
				Lard		3,640
				Gold mines	16	2,700

STATISTICS OF AMADOR COUNTY, 1909-10—Continued.

Poultry and Eggs.			Forest Products.		
	Dosen.	Value.		Amount.	Value.
Chickens	3,600	\$15,550	Area of timber lands		
Ducks	40	240	(acres)	70,400	
Geese	20	240	Cedar (acres)	400	
Turkeys	100	2,500	Pine (acres)	70,000	
Eggs	60,000	15,000	Sawnmills (number)...	3	
Total value		\$33,480	Charcoal (sacks)	10,000	
Miscellaneous Products.			Fuel, wood (cords)....	8,000	
	Pounds.	Value.	Lumber (feet)	320,000	
Bees (hives)—Number	7	\$9	Piles	130,000	
Sorghum—Cane	730,000	1,825	Posts (pieces)	10,000	
Tobacco	500	50	Sash and door fac-		
Gold ore crushed.....	800,000	3,900	tories (number)	1	
Live Stock Industry.			Shakes (thousand)....	50	
	Number.	Value.	Shingles (thousand)...	25	
Cattle—Beef	250	\$5,000	Lagging, etc.	167,000	\$11,775
Stock	11,000	132,000	Logs		110,000
Dairy Cows—Graded..	2,300	4,600	Total value		\$353,775
Shorthorn bulls	8	160	Power used for mills and manufactories		
Calves	1,200	6,000	in county—Steam (number), 14; electrical		
Swine	1,400	5,600	(number), 7; water (number), 7.		
Horses—Thoroughbred	6	4,000	Manufactured Output.		
Standard-bred	6	2,000		Quantity.	
Common	2,200	9,900	Clay	\$35,000	
Colts	250	6,250	Coal (tons)	16,000	
Jacks and jennies....	5	250	Flour (barrels)	2,000	
Mules	180	\$8,000	Lime (barrels)	10,000	
Sheep	2,000	4,000	Malt (tons)	375	
Lambs	100	100	Hides (pounds)	8,250	
Common goats	700	1,400	Lard (pounds)	23,000	
Wool (pounds)	20,000	\$24,000	Tallow (barrels)	100	
Mohair (pounds)	100	2,000	Olive oil (gallons)	150	

BUTTE COUNTY.

Butte County is situated in the northern and eastern Sacramento Valley, and embodies within its confines both mountain, foothill, and valley land. Its climate is most diverse, and in its confines are grown all the products to be found in the temperate and semi-tropical zones. The county has been fittingly described as a sample package of the United States. In the higher altitudes, apples thrive, while in the lower stretches of the rolling foothills, oranges, lemons, and olives reach perfection. On the broad plains great rice fields are now being planted, and this industry promises to rival that of alfalfa and dairy farming and the more extensive grain farming that has hitherto prevailed. Deciduous fruits of every kind are grown. In fact, there is hardly a product of the United States that in some part of Butte County can not be grown to a commercial extent.

The transportation facilities are unexcelled. This, however, is a comparatively new condition. The Western Pacific passes through the county. The Central and Southern Pacific also traverse it with main and branch lines. Its cities are also reached by the Northern Electric. The Butte County Railroad extends from Chico into the mountains as far as Stirling City, while the Butte and Plumas Railway is now building from Oroville into another rich mountain country.

The coming of transportation facilities has brought a great increase in the number of factories. The Diamond Match Company has the largest lumbering establishment on the Pacific Coast in this county, the main mills being located at Chico and Stirling City. The Truckee Lumber Company has just completed a large mill at Oroville. The Swayne Lumber Company has also built a large mill in the mountains east of Oroville, on the Western Pacific. The timber industry here has accordingly assumed mammoth proportions.

The largest olive pickling works in the United States are located in Oroville. A large number of smaller mills, and olive oil works are also located in the same field. There are also a number of orange packing houses, and many drying yards and canneries.

The manufacture of electric power has also assumed a large place. The largest producer is the Great Western Power Company, whose plant upon the Feather River is the largest in the United States. The Pacific Gas and Electric Company has also large plants here, and the Oro Water, Light and Power Company is also a big producer. Other power plants are in contemplation. Civil engineers have stated that the watershed of the Feather River contains more potential power than the anthracite coal fields of Pennsylvania.

The county is exceptionally well watered. Through it runs the Feather River with a large number of tributary streams. On one boundary is the great Sacramento River. As a result of the abundance of water, increased attention is being given to irrigation. The Butte

County Canal covers thousands of acres around Gridley, where the utmost prosperity prevails. Other companies are establishing themselves, both in the valley and on the rolling foothill lands.

Educational facilities are unexcelled. There are three high schools in the county, all accredited at the University of California. At Chico is located a State normal school.

The county is now at the beginning of a great forward movement and optimism prevails everywhere. The reason for the faith of the people in their county is to be found in the fact that the productivity of the land assures increased values to the land, while the faith with which capital regards the county can be seen in the tremendous investments made here.

The stamp of approval has been placed upon the lands of Butte County by the experts of the United States Government. After searching the United States over, lands near Chico were selected for the establishment of the United States Plant Introduction Gardens, and there the chief experimental work conducted by the United States is being carried forward to-day.

Butte County is also the largest gold-producing county of the State. The chief gold-dredging field in the world lies around Oroville, and millions are invested in the industry. An increasing investment in quartz and gravel properties is also being made.

STATISTICS OF BUTTE COUNTY, 1909-10.

General Statistics.

Area 1,727 square miles, or 1,105,280 acres.	
Number of farms	2,480
Number of acres assessed.....	900,511
Value of country real estate.....	\$10,688,130
Of improvements thereon	\$2,475,190
Of city and town lots.....	\$1,193,525
Of improvements thereon	\$2,118,905
Of personal property	\$3,709,479
Total value of all property.....	\$20,185,225

Expended on roads, last fiscal year	\$66,243
Expended for bridges, last fiscal year	\$113,868
Number of miles of public roads	1,710
Road levy per \$100, 1910.....	40c
Value of county buildings.....	\$262,000
Irrigating ditches, miles, 296; cost	\$93,567
Railroads, steam—miles, 160.42; assessed value	\$2,500,896
Railroads, electric—miles, 50.36; assessed value	\$25,807
Electric power plants—4; assessed value	\$1,408,287
Electric power lines—miles, 157.01; assessed value	\$90,853
Number of acres irrigated.....	18,500

Cereal Products and Hay.

Tons of 2,000 pounds.			
	Acres.	Bushels.	Value.
Wheat	44,642	908,333	\$735,749
Barley	49,792	1,347,365	606,314
Oats	3,906	143,800	57,520
Corn	396	15,421	12,550

Total cereals 98,736 2,414,919 \$1,412,133

	Acres.	Tons.	Value.
Alfalfa hay	13,138	59,678	\$341,685
Grain hay	57,442	53,795	430,460
Grass hay	1,329	1,721	8,605

Total hay 71,929 115,194 \$780,750

Fish Industry.

	Pounds.	Value.
Salmon	104,253	\$6,255

Number of Fruit Trees and Vines.

	Bearing.	Non-bearing.	Total.
Apple	37,050	17,543	54,593
Apricot	12,964	796	13,760
Cherry	5,697	3,317	9,014
Fig	12,627	2,560	15,187
Lemon	7,027	355	7,382
Nectarine	919	26	945
Olive	67,571	10,563	78,134
Orange	178,611	19,811	198,422
Peach	277,825	66,380	344,205
Pear	21,943	6,315	28,258
Plum	12,968	2,068	15,036
Prune	142,435	38,079	180,514
Quince	669	49	718
Other kinds..	2,000	1,250	3,250

Total fruit..	780,306	169,110	949,418
Almond	93,336	26,159	119,495
Chestnut	565	50	615
Pecan	135	60	195
Walnut	3,470	1,905	5,375

Total nut ..	97,506	28,174	125,680
Grapevines ...	211,534	20,375	231,909
Berries, acres.	233	25	258

Poultry and Eggs.

	Dozen.	Value.
Chickens	11,904	\$71,424
Ducks	89	534
Geese	41	545
Turkeys	1,798	53,940
Eggs	470,250	117,560

Total value

\$244,003

Miscellaneous Products.

	Pounds.	Value.
Bees (hives), number.	1,310	\$3,930
Beeswax	950	250
Honey	20,985	2,098
Hops	247,000	32,110
Alfalfa seed	4,800	850
Grass seed	13,000	1,300
Sorghum, cane	136,475	250
Syrup (gallons)	285	142
Sugar beets (tons)....	56,515	240,000
Rice	437,500	17,400

STATISTICS OF BUTTE COUNTY, 1909-10—Continued.

Fruits, Vegetables, Etc.			Live Stock Industry.			
	Total Production. Pounds.	Value.		Number.	Value.	
Green—			Cattle—Beef	19,625	\$785,000	
Apples	3,392,695	\$33,926	Stock	13,160	315,840	
Apricots	117,970	1,180	Dairy Cows—Graded..	3,761	188,050	
Asparagus	23,200	1,160	Thoroughbred—			
Blackberries	238,350	11,920	Holsteins	25	1,500	
Beans	163,025	7,500	Shorthorns(calves)	3,994	39,940	
Beets	53,250	795	Calves	40,565	1,330,330	
Cabbage	125,000	1,875	Swine	14,874	917,000	
Celery	28,190	845	Horses—Thoroughbred	12	15,000	
Cauliflower	11,435	575	Standard-bred	168	33,600	
Corn	180,760	3,420	Common	8,926	624,820	
Currants	750	65	Colts	1,073	37,555	
Cherries	204,860	10,243	Jacks and jennies....	17	4,700	
Figs	100,500	2,010	Mules	1,557	233,550	
Gooseberries	2,750	275	Sheep	81,570	244,710	
Grapes	1,063,500	8,000	Lambs	8,300	18,600	
Grape fruit (boxes)...	890	2,790	Angora goats	1,325	5,300	
Lemons (boxes)	2,193	6,571	Common goats	950	2,750	
Loganberries	81,350	3,254	Total stock	159,337	\$3,467,915	
Nectarines	92,500	925	Wool (pounds)	695,500	97,370	
Onions	17,150	5,715	Mohair (pounds)	12,000	2,400	
Oranges (boxes)	203,890	305,835				
Olives	1,670,000	41,750	Forest Products.			
Pears	1,051,000	21,500		Amount.	Value.	
Peaches	10,022,000	100,200	Area of timber lands			
Peas	24,000	750	(acres)	350,000		
Persimmons	9,500	760	Cedar (acres)	35,000		
Plums	1,762,400	17,625	Pine (acres)	140,000		
Irish potatoes	1,809,000	18,090	Fir (acres)	175,000		
Sweet potatoes	231,000	3,365	Sawmills (number)...	8		
Prunes	9,600	970	Fuel, wood (cords)...	15,700	\$58,380	
Quinces	22,000	450	Laths (thousand)	519,000	2,765	
Raspberries	24,600	2,460	Lumber (feet)	63,000,000	1,221,500	
Strawberries	93,500	4,675	Posts (pieces)	19,000	1,900	
Tomatoes	565,000	5,650	Railroad ties (pieces).	40,000	10,000	
Turnips	36,000	360	Sash and door fac-			
Rhubarb	5,000	250	tories (number)	1	75,000	
Pumpkins (tons)	2,266	4,530	Shakes	359,000	3,590	
Totals	24,441,074	\$611,944	Shingles	800,000	20,000	
			Total value		\$1,393,135	
Dried—	Pounds.	Value.	Power used for mills and manufactories			
Almonds	685,000	\$98,050	in county—Steam (number), 14; electrical			
Apples	5,000	2,500	(number), 13; water (number), 5.			
Apricots	70,500	7,500	Manufactories.			
Beans	7,000	2,800		No.	Number of Employees.	Value of Products.
Chestnuts	5,900	5,900	Wood boxes	1	50	\$150,000
Figs	459,000	13,750	Cigars	2	4	4,800
Grapes	4,000	80	Confectionery	2	6	7,800
Nectarines	2,500	150	Flouring mills	2	15	255,000
Onions	344,000	3,450	Foundries and iron			
Pears	55,000	4,400	works			252,000
Peaches	4,168,000	208,425	Matches	1	40	150,000
Peanuts	2,000	100	Meat products	16	85	
Plums	46,900	2,815	Hides			46,800
Prunes	3,004,500	150,225	Lard			11,796
Raisins	75,000	3,000	Meat packed			2,700
Walnuts	21,000	2,625	Tallow			10,800
Totals	8,955,300	\$505,770	Olive oil and pickled			
			olives	13	113	
Canned—	Cases.	Value.	Planing mills	4	92	450,000
Blackberries	100	\$250	Granite	1	7	30,000
Pears	400	1,000				
Peaches	40,500	101,250	Wines, Brandies, Etc.			
Tomatoes	500	1,250		Gallons.	Value.	
Totals	41,500	\$103,750	Dry wines	2,500	\$1,000	
			Sweet wines	2,611	1,044	
Manufactured Output.			Cider	2,000	1,000	
	Quantity.		Vinegar	205,000	30,750	
Brick	100,000		Number of wineries, 2.			
Cigars	250,000		Dairy Industry.			
Flour (barrels)	25,000			No. Production.	Value.	
Hides (pounds)	512,000		Creameries	2		
Lard (pounds)	98,300		Skimming stations. 15			
Meat packed (pounds)	15,000		Butter (pounds) .. .	366,485	\$109,945	
Tallow (barrels)	600					
Olive oil (gallons)	56,975					
Pickled olives	97,400					

COLUSA COUNTY.

Colusa County is situated in the heart of the great Sacramento Valley. The transportation facilities are the Southern Pacific Railroad, bisecting the county from north to south, the Colusa and Lake Railroad, running from Colusa westwardly to Sites, and the navigable Sacramento River.

The fertile soil, the temperate climate, the extreme dryness of the atmosphere during two thirds of the year, and lastly, a sufficient rainfall, make possible the production of great wealth from the fertile acres of this county. The present tendency is the disintegration of the large farms and a settling up of the county with small holdings. Several millions of dollars have recently been invested by land companies, who will induce people from other places to settle upon lands purchased by them in this county. Large irrigation ditches are being constructed that will tap thousands of acres of land which by the assistance of water will be able to produce many fold more than is now produced. Everything gives promise that the population, that the irrigated portion of our land area, and the value of our lands, will more than treble during the next five years.

The system of schools throughout the county is very efficient, and although the county is large, the schools are conveniently located and within reach of those desiring education.

Colusa is the principal town and county seat of the county. Its population, including two additions, is about 2,500 inhabitants. It has a primary, grammar, and high public schools, besides a convent. The town owns its own public library, municipal water works system and sewer system, all recently installed.

The western portion of the county is principally mountainous, with some very productive valleys intervening. Cattle and live stock interests prevail. Several famous mineral resorts are located in this portion of the county, and thousands of bottles of mineral water are shipped to every point of note on the Pacific coast. In a small way some gold and quicksilver mining is maintained at Sulphur Creek, while at Sites two quarries take out stone, known as the famous Colusa sandstone, from which many prominent buildings in San Francisco are built.

STATISTICS OF COLUSA COUNTY, 1909-10.

General Statistics.		General Statistics—Continued.	
Area, 691,200 acres.		Expended for bridges, last fiscal year	\$16,398
Number of farms	823	Number of miles of public roads	1,225
Number of acres assessed	585,179	Road levy per \$100, 1910	40c
Value of country real estate	\$9,215,445	Value of county buildings	\$100,000
Of improvements thereon	\$1,275,440	Irrigating ditches, cost	\$4,445
Of city and town lots	\$404,600	Railroads, steam—miles, 56;	
Of improvements thereon	\$509,140	assessed value	\$828,126
Of personal property	\$1,506,714	Electric power plants, 1; electric power lines (miles), 16;	
Total value of all property	\$12,992,538	assessed value	\$9,580
Expended on roads, last fiscal year	\$39,527	Number of acres irrigated	2,400

STATISTICS OF COLUSA COUNTY, 1909-10—Continued.

Number of Fruit Trees and Vines.				Fruits, Vegetables, Etc.			
	Bearing.	Non-bearing.	Total.		Total Production. Pounds.	Value.	
Apple	8,125	.....	8,125	Green—		
Apricot	18,870	500	19,370	Apples	40,000	\$800	
Cherry	2,475	.....	2,475	Blackberries	3,500	150
Fig	4,450	1,800	6,250	Beans	4,000	80	
Lemon	900	100	1,000	Beets	3,500	85	
Olive	6,600	100	6,700	Cabbage	50,000	800	
Orange	9,500	500	10,000	Celery	25,000	510	
Peach	13,000	.....	13,000	Cauliflower	15,000	225
Pear	3,700	.....	3,700	Corn	29,000	400
Prune	85,000	5,800	90,800	Figs	35,000	380	
Quince	130	30	160	Grapes	125,000	1,500	
Other kinds...	250	.....	250	Grape fruit	4,000	250
Total fruit..	153,000	8,830	161,830	Lemons (boxes)	250	500	
Almond	25,600	5,000	30,600	Loganberries	3,000	250	
Walnut	3,800	900	4,700	Onions	42,000	220	
Total nut ...	29,400	5,900	35,300	Oranges (boxes)	5,000	11,250	
Grapevines (all kinds)			92,000	Olives	25,000		
Berries, acres (all kinds)			75	Pears	50,000	1,250	
Live Stock Industry.				Peaches	12,500	250	
	Number.	Value.		Peas	15,000	150	
Cattle—Beef	1,500	\$45,000		Irish potatoes .....	.....	3,900
Stock	17,200	244,000		Sweet potatoes	22,000	250	
Dairy Cows—Graded..	.....	100,000		Tomatoes	400,000	500
Calves	4,802	48,020		Totals	1,823,500	\$23,700	
Swine	21,540	175,000		Dried—	Pounds.	Value.	
Horses—Thoroughbred	8	4,000		Almonds	140,000	\$14,000	
Common	4,700	235,000		Apricots	32,000	2,420	
Colts	1,100	22,000		Beans	1,432,000	44,960	
Jacks and jennies....	69	5,000		Figs	50,000	2,500	
Mules	5,844	600,820		Peaches	16,000	900	
Sheep	80,000	320,000		Prunes	1,500,000	47,000	
Lambs	52,000	104,000		Raisins	850,000	28,000	
Angora goats	3,500	17,500		Walnuts	8,000	800	
Total stock	194,763	\$1,920,140		Silver prunes	30,000	1,250	
Wool (pounds)	756,000	150,000		Totals	4,058,000	\$141,830	
Mohair (pounds)	13,500	2,600		Forest Products.			
Cereal Products and Hay.					Amount.	Value.	
	Tons of 2,000 pounds.	Value.		Sawmills (number) ...	1	\$3,000	
	Acres.	Tons.	Value.	Fuel, wood (cords)....	900	7,200	
Wheat	21,200	18,566	\$519,848	Total value		\$10,200	
Barley	180,000	108,803	2,176,000	Power used for mills and manufactories			
Oats	500	425	13,000	in county—Steam (number), 1; electrical			
Corn	1,400	1,200	42,000	(number), 3; 1 sawmill, 1 flourmill, 2 plan-			
Total cereals..	203,100	132,774	\$2,750,848	ing mills.			
Alfalfa hay	36,000	228,000		Poultry and Eggs.			
Grain hay	60,798	480,000			Dozen.	Value.	
Total hay	96,798	\$708,000		Chickens	3,504	\$20,024	
Wines, Brandies, Etc.				Ducks	40	240	
	Gallons.	Value.		Geese	15	120	
Sweet wines	4,000	\$5,000		Turkeys	1,350	25,000	
Cider	1,600	1,800		Eggs	125,000	31,250	
Fish Industry.				Total value		\$76,634	
	Pounds.	Value.		Miscellaneous Products.			
Bass	15,000	\$1,500			Pounds.	Value.	
Dairy Industry.				Bees (hives), number.	800	\$1,600	
	Production.	Value.		Broomcorn brush	310,000	15,000	
Creameries	\$2,500			Honey	190,000	1,900	
Butter (pounds)	502,000	200,000		Alfalfa seed	180,000	27,000	
Manufactured Output.				Broomcorn seed	350,000	22,540	
	Quantity.			Dressed poultry	150,000	10,500	
Flour (barrels)	15,000			Wild game	75,000	4,000	
Hides (pounds)	90,000			Manufactories.			
Lard (pounds)	68,230				No.	Number of Employees.	Value of Products.
Tallow (barrels)	63,400			Flouring mills	1	5	\$120,500
				Sandstone	2	20	75,000

CONTRA COSTA COUNTY.

Contra Costa is one of the central counties, its shore line being within 14 miles of San Francisco. It possesses unusually good traveling facilities, both by rail and by steamer. The county has 70 miles of water front, nearly all of which is upon deep water, navigable by all vessels engaged in commerce. Over three fourths of its area is cultivated, the balance being used for grazing. The only mountain of any size is Mount Diablo, which is 3,896 feet in height, and almost in the geographical center of the county.

About two thirds of the area is rolling and hilly. Lying between the hills are some of the most fertile and beautiful valleys in the State, which are drained and watered by many streams, the banks of which are bordered by oak, sycamore, laurel, willow, etc., while the hills are dotted with oaks, many of which are of large size.

The farming lands in the eastern section are between the foothills and the San Joaquin River. The soil is of a rich alluvial nature, and produces wheat, barley, alfalfa, fruit, and vines. To the northward and between the uplands and the San Joaquin River is a body of tule lands, a large portion of which has been reclaimed, and is some of the most productive land in the State, being a rich deposit of sediment and decomposed vegetation. Alfalfa, asparagus, potatoes, beans, etc., are produced on the largest scale on such lands, the asparagus being shipped East by the car load during the early spring.

The average rainfall is from 18 to 23 inches, which is ample for all purposes of agriculture, horticulture, etc.

In depth, the soil throughout the county shows a remarkable continuity of rich alluvial deposits underlaid by limestone or clay. There is an occasional change to a coarse sandy and gravelly heavy loam of black or brown tint. It has great power for enduring drought, and is easy to work, giving large returns. The soil in the uplands is in character similar to that of the lowlands, and being drier, is for some purposes even better.

Irrigation is not required to insure crops; the abundant rainfall, the absence of evaporating heat, and the moisture-laden breezes from the ocean furnish abundant humidity for all forms of vegetable life without recourse to artificial irrigation.

The many beautiful valleys and the rolling hills are strikingly similar in general characteristics to the gentle slopes of sunny France. Scattered in all directions are numerous small vineyards and orchards that produce rich results. Fruit growing has proved successful and remunerative.

Grain raising is very prominent in this county. A very large acreage is planted to wheat, oats, barley, and hay.

The raising of sugar beets is a growing industry.

Vegetables of all kinds are raised very profitably and on a large scale: one very large tract of land is used entirely for the propagation of

asparagus for early Eastern shipment. Potatoes, beans, etc., are a prolific and profitable crop, especially in the central portion.

Natural feed is abundant, both on the hillsides and at a higher elevation.

Stock raising is a leading industry, as the reclaimed lowlands for summer grazing and the rolling hills for winter, close together, create conditions whereby a failure is impossible. The stock farms have produced some of the most famous trotting and pacing horses. In addition to the raising of horses, much attention is given to blooded cattle, sheep, and hogs.

Large dairies are conducted, and in the western end the product mostly shipped to the cities is milk, while in the central and eastern parts butter is the main object. Low freight and express rates give unusual advantages.

Contra Costa County is well adapted to poultry raising. Feed can be obtained cheaper than in other sections where the industry is thriving. The central part of the county is only a few hours' drive from Oakland and suburbs. The demand for eggs is always greater than the supply.

The only important mining industry is the coal mines of Mount Diablo, although some little mining for precious metals has been done.

The terminus of the Santa Fe Railroad is located at Point Richmond, and many substantial improvements in the way of wharves, etc., on a very extensive plan, have been constructed.

Post Costa, the shipping point for the bulk of the grain raised in California, has extensive warehouses.

At Pinole are located large stockyards; near Vallejo Junction is the largest smelting works in the State; at Vallona are extensive lumber yards, where ships from Oregon and Puget Sound discharge. At Crockett are flouring mills; also agricultural works.

STATISTICS OF CONTRA COSTA COUNTY, 1909-10.

General Statistics.				Number of Fruit Trees and Vines.			
				Bearing.	Non-bearing.	Total.	
Area 877 square miles, or 561,267 acres.							
Value of country real estate.....	\$13,417,780			Apple	23,000	3,000	26,000
Of improvements thereon	\$4,837,145			Apricot	44,000	4,000	48,000
Of city and town lots	\$3,821,750			Cherry	25,000	6,000	31,000
Of improvements thereon	\$2,495,805			Fig	4,000	600	4,600
Of personal property	\$7,421,725			Lemon	1,000	300	1,300
Total value of all property.....	\$35,399,378			Nectarine	1,000	300	1,300
Expended on roads, last fiscal year	\$84,903			Olive	15,000	4,000	19,000
Road levy per \$100, 1910.....	40c			Orange	3,400	600	4,000
Value of county buildings.....	\$415,000			Peach	65,000	4,000	69,000
Railroads, steam—miles, 163.54; assessed value	\$3,405,163			Pear	120,000	5,000	125,000
Electric power lines—miles, 198; assessed value	\$175,000			Plum	21,000	1,000	22,000
				Prune	80,000	12,000	92,000
				Quince	3,000	250	3,250
				Total fruit..	405,400	41,050	446,450
Cereal Products and Hay.				Almond	280,000	10,000	290,000
Tons of 2,000 pounds.				Chestnut	500	.....	500
	Acres.	Bushels.	Value.	Pecan	500	.....	500
Wheat	16,000	560,000	\$672,000	Walnut	30,000	20,000	50,000
Barley	50,000	3,000,000	1,500,000	Total nut ...	311,000	30,000	341,000
Oats	15,000	900,000	405,000	Grapevines ...	3,450,500	340,400	3,790,900
Corn	1,000	40,000	30,000	Berries, acres	500	.....	500
Total cereals.	90,000	.....	\$2,607,000				
	Acres.	Tons.	Value.	Forest Products.			
Alfalfa hay	2,500	15,000	\$120,000		Amount.	Value.	
Grain hay	90,000	200,000	2,400,000	Redwood (acres)	1,200	.....	.....
Grass hay	10,000	25,000	200,000	Fuel, wood (cords)....	16,000	.....	\$96,000
Total hay	102,500	240,000	\$2,720,000	Total value			\$96,000

STATISTICS OF CONTRA COSTA COUNTY, 1909-10—Continued.

Fruits, Vegetables, Etc.

	Total Production. Pounds.	Value.
Green—		
Apples	150,000	\$4,500
Apricots	840,000	.....
Beets	2,000,000	5,000
Celery	1,000,000	100,000
Corn	200,000	30,000
Cherries	2,000,000	80,000
Figs	12,000	600
Gooseberries	2,000	.....
Grapes, table	24,000,000	60,000
Lemons (boxes)	1,000	1,600
Loganberries	12,000	500
Onions	1,000,000	20,000
Oranges (boxes)	1,200	1,700
Olives	500,000	10,000
Pears	1,500,000	30,000
Peaches	1,900,000	47,500
Plums	20,000	3,000
Irish potatoes	102,000,000	18,000
Prunes	1,300,000	26,000
Quinces	22,000	440
Raspberries	4,000	360
Strawberries	12,000	600
Tomatoes	800,000	8,000
Totals	117,676,300	\$1,311,960

	Pounds.	Value.
Dried—		
Almonds	1,800,000	\$216,000
Apricots	2,200,000	15,400
Beans	1,500,000	90,000
Pears	250,000	15,000
Peaches	120,000	8,400
Prunes	1,200,000	48,000
Walnuts	160,000	19,200
Totals	7,230,000	\$412,000

Poultry and Eggs.

	Dozens.	Value.
Chickens	25,000	\$120,000
Ducks	900	5,400
Geese	1,100	16,000
Turkeys	600	12,000
Eggs	875,000	262,500
Total value		\$390,700

Miscellaneous Products.

Bees (hives)—Number, 500.

Wines, Brandies, Etc.

	Gallons.	Value.
Dry wines	6,000,000	\$960,000
Beer (barrels)	12,000	84,000
Cider	52,000	5,800
Vinegar	25,000	5,000

Number of wineries, 65; number of distilleries, 6; number of breweries, 3.

Live Stock Industry.

	Number.	Value.
Cattle—Beef	8,000	\$200,000
Stock	9,250	165,000
Dairy Cows—Graded..	10,000	300,000
Calves	8,000	.....
Swine	10,000	.....
Horses—Thoroughbred	75	15,000
Standard-bred	175	24,000
Common	6,400	320,000
Colts	2,000	40,000
Jacks and jennies....	20	3,000
Mules	2,000	110,000
Sheep	20,000	50,000
Lambs	7,000	10,500
Angora goats	200	400

Manufactories.

	No.	Number of Employees.	Value of Products.
Wood boxes	1	300	\$800,000
Brick	7	450	2,400,000
Cement	1	200	1,500,000
Cigars	5	25	20,000
Confectionery	3	10	10,000
Flouring mills	2	20	200,000
Foundries and iron works	1	26	.....
Furniture	2	50	.....
Lime	3	500	1,000,000
Matches	1	60	50,000
Paper	1	125	500,000
Planing mills	2	500	.....
Artificial stone	1	.....	.....
Oil refineries	3	3,200	.....
Sugar refinery	1	.....	.....
Syrups and extracts..		400	.....
Smelter and acid works		1,000	.....
Powder works		750	3,080,000

EL DORADO COUNTY.

El Dorado County is situated on the western slope of the Sierra Nevada Mountains, in the eastern portion of the State. The county is about 75 miles long and about 30 miles in width. The western portion of the county borders the Sacramento Valley, and is used principally for grazing, stock raising, and wine vineyards. The central portion of the county includes the great mineral belt, known as the Mother Lode, from which millions of dollars have been extracted on and near the surface. This belt affords great opportunities for capital, as deep mining is but in its infancy. In this belt, which is chiefly foothills, can be found some of the best fruit lands in the State, El Dorado County being noted for the size and flavor of its apples, pears, plums, peaches, and other fruits.

The eastern portion, being at an altitude of from 3,000 to 7,000 feet, supplies summer pasturage for a vast number of cattle, sheep, and horses. In this region water is abundant, awaiting capital and labor to harness the everflowing streams. Most of this area is covered by a virgin growth of sugar and white pine, fir, and cedar timber, from which the eastern markets are supplied with a portion of their high-grade lumber.

STATISTICS OF EL DORADO COUNTY, 1909-10.

General Statistics.				Number of Fruit Trees and Vines.					
Area 1,796 square miles, or 1,049,440 acres.				Bearing. Non-bearing. Total.					
Number of farms				Apple	5,900	2,800	8,700		
Number of acres assessed				Apricot	600	350	950		
Value of country real estate				Cherry	2,600	900	3,500		
Of improvements thereon				Fig	1,550	.....	1,550	
Of city and town lots				Nectarine	1,700	500	2,200		
Of improvements thereon				Olive	3,800	500	4,300		
Of personal property				Orange	900	100	1,000		
Total value of all property				Peach	125,500	14,800	140,300		
Expended on roads, last fiscal year				Pear	12,500	10,000	22,500		
Expended for bridges, last fiscal year				Plum	5,800	500	6,300		
Number of miles of public roads				Prune	18,000	600	18,600		
Road levy per \$100, 1910				Quince	500	.....	500	
Value of county buildings				Other kinds	15,000	1,000	16,000		
Irrigating ditches—miles, 160; cost				Total fruit ..	194,350	32,050	226,400		
Railroads, steam—miles, 92; assessed value				Almond	1,000	.....	1,000	
Electric power plants—1; assessed value				Chestnut	500	.....	500	
Electric power lines—miles, 36; assessed value				Walnut	750	900	1,650		
Number of acres irrigated—By irrigating canals				Other nuts ...	100	.....	100	
By springs and small streams				Total nut ...	2,350	900	3,250		
				Grapevines ...	332,700	900	333,600		
				Berries, acres.	60	20	80		
				Wines, Brandies, Etc.					
Cereal Products and Hay.				Gallons. Value.					
Tons of 2,000 pounds.				Dry wines				12,800	\$5,000
Acres. Tons. Value.				Sweet wines				8,000	8,000
Wheat	200	200	\$9,000	Beer (barrels)				1,200	12,000
Barley	100	100	4,800	Brandy				7,000	14,000
Oats	100	100	4,500	Cider				600	150
				Vinegar				7,000	1,750
Total cereals..				Number of wineries, 5; number of distilleries, 4; number of breweries, 1.					
Grain hay	44,000		\$528,000	Dairy Industry.				Production. Value.	
Grass hay	2,000		15,000	Butter (pounds)				220,000	\$70,000
				Cheese (pounds)				14,000	2,800
Total hay	46,000		\$543,000						

FRESNO COUNTY.

Including vineyards, Fresno is the greatest fruit and wine producer in the State of California. Of the fifty-eight counties in the State, the first twenty-seven were organized on February 18, 1850, and six years later Fresno County was formed on April 19, 1856. It is situated in the exact center of the State, and in the middle of the fertile San Joaquin Valley. There are only four counties which exceed Fresno in size—San Bernardino, Inyo, Kern, and Riverside, in the order named. When Fresno was first formed it was considerably larger, but on the 11th day of March, 1893, a large slice, consisting of 2,140 square miles was carved out of the northern part of the county, and formed into Madera County; and still more recently, Fresno County was again mutilated by a little over 117 square miles of the southeast portion being transferred to Kings County by an act of the Legislature approved April 12, 1909.

Before being partitioned, Fresno County comprised 7,746 square miles, but the land area now amounts to 6,035 square miles, or 3,862,400 acres, and, therefore, still remains the fifth largest county of the fifty-eight in the State, and one of the most productive. It is also the fifth largest in population.

Among the other towns in the county are Coalinga, one of the largest oil-producing districts in the world; Selma, Kingsburg; also, Sanger and Clovis, both having large sawmills and lumber depots; Reedley, on the Kings River, near the foothills; Laton, in the center of a large agricultural and dairying district, and Kerman, the latest town in the county.

The word "Fresno," in Spanish, signifies ash tree, and it was because of the abundance of mountain ash in the mountains of this county that it received its name.

TOPOGRAPHY AND SOIL.

Fresno County is naturally subdivided into two portions—plains and mountains. The plains are the bottom of the San Joaquin Valley, extending from the foot of the Coast Range on the west, to the foothills of the Sierra Nevadas on the east. The trough of the valley south of Fresno has an elevation of 180 feet. Fresno City has an elevation of 290 feet, and the valley, at the edge of the foothills, has an elevation of about 500 feet. From the first foothills the rise is rapid, the mountains culminating in peaks rising 10,000 to 12,000 feet high. The country about Fresno is a vast plain intersected by the San Joaquin and Kings rivers and their tributaries. Four natural soil divisions have been recognized—the foothill region, where agriculture was formerly confined to grazing; the plains of the valley, with red soils lying near the hills; the "white ash" soil found further out in the plain, and the bottoms, or alluvial lands, along the Kings River.

CLIMATE AND RAINFALL.

There is a dry and a wet season; the former from about May to September; and the latter from the middle of October or early part of November. The average rainfall at Fresno is about 10.12 inches annually. The rains, which are at irregular intervals during the winter, seldom last more than two or three days at a time. There are about 275 days of sunshine in the year. The atmosphere during the summer months is dry, and the heat not nearly so oppressive as in the East, and other places where the humidity is great. Sunstroke is unknown.

POPULATION.

Considering that California was only admitted as a State on September 9, 1850, and that Fresno was only organized as a county in 1856, its steady increase in population and prosperity has been wonderful. When we come to consider the results which have been obtained within less than a span of an ordinary lifetime by a mere handful of people, it is simply marvelous. In 1880 the population was 4,605; 1870, 6,336; 1880, 32,026; 1900, 37,862, and, according to the last census, just completed, 75,657.

FARMS AND FARMING.

The county has passed through four stages of development. First came mining in the early days before it was organized as a county, and this period extended to about 1860-64. Secondly, came the stock raising period, which arose upon the gradual disappearance of placer mining, and lasted until 1874, although sheep raising still continued on a large scale; thirdly, about 1868, the farming interest sprang up, although prior to the advent of the railroad in 1870, agriculture amounted to very little. The fourth and most important may be called the viticultural and fruit era, which began to come into prominence early in the eighties, and has now become the leading feature of the county. There is a mistaken impression among many homeseekers that farms and vineyards are all on a large scale, but the days of enormous land grants and ranches are over, and the land is now being rapidly subdivided and settled.

IRRIGATION.

As California holds the first place among all the states in the Union in irrigation, so Fresno is the leading county in the State, both in number and extent of its canals and ditches, having more than double the acreage under irrigation than any other county. In 1880 there were only about 65 miles of main canals in the county, whereas now there are over 450 miles of main canals and thousands of distributing ditches, irrigating some 400,000 acres. Most of the canals are owned by corporations, whose interests are entirely separate and distinct from the ownership of the land irrigated. The remainder are owned by companies, the stock of which is, for the most part, in the hands of the landowners. The capacity of these canals is 500 cubic feet per second. All draw their water from the Kings River. The combined capacity of these canals is 3,500 cubic feet per second. The water is much cheaper than in many other parts of the State, being only 62½ cents per acre per annum under the Fresno and Laguna canals, and 75 cents per acre under the Consolidated Canal.

FARM AND FARM PRODUCE—CEREALS.

In the cultivation of cereals, the county has fallen off greatly during the last nine years, especially in wheat and barley. The acreage is reported as follows, but is really much larger (from the assessor's books):

Wheat -----	8,400 acres.
Barley -----	7,500 acres.
Alfalfa hay -----	57,800 acres.
Oats -----	1,800 acres.
Hay -----	6,700 acres.

DAIRY PRODUCTS.

During the last ten years the dairy industry has made great progress, except in the manufacture of cheese, which, however, was never produced on a very large scale. In 1898 only 291,754 pounds of butter were produced and 604,861 in 1900, and 4,940,000 in 1910.

VINEYARD AND ORCHARD FRUITS.

Including grapes, Fresno produces more fruit than any other county in the State, and California produces twenty-five per cent of the total value of fruit raised in the United States.

Fresno County holds the first place in the production of grapes, raisins, figs, sweet wines, and brandy, and is one of the leading counties of the State in the production of peaches, apricots, and olives, and the acreage in citrus fruits is spreading. Fresno's output of raisins for 1910 was 33,079 tons.

CITRUS FRUITS.

The shipments of oranges raised in Fresno County during the last four seasons have been, in round numbers, as follows:

Season.	Oranges, cars.	Lemons, cars.
1905-6 -----	150	15
1906-7 -----	200	15
1907-8 -----	210	20
1908-9 -----	220	12
1909-10 (to December 31st) -----	175	15

A car load consists of 362 boxes of oranges, and 312 of lemons.

OLIVES AND OLIVE OIL.

Fewer records appear to have been kept regarding this industry than most others. There are, according to the best authorities, about 12,000 to 14,000 acres of olive trees planted in the State, of which almost half are in bearing. Last year about 350,000 gallons of olive oil and 450,000 gallons of pickled, ripe and green, olives were produced in the State. Fresno has a larger acreage in olives than any other county in the San Joaquin Valley. Fresno County produced the following quantities:

Year.	Pickled olives, gallons.	Olive oil, gallons.
1905 -----	10,000	2,500
1906 -----	5,000	5,000
1907 -----	40,000	14,000
1908 -----	45,000	16,000
1909 -----	38,000	12,000
1910 -----	43,000	10,000

WINE AND BRANDY.

The production of sweet wine and brandy during the last few years has been as follows (gallons):

Year.	California.		Fresno County.	
	Sweet wine.	Com. brandy.	Wine.	Brandy.
1905 -----	11,502,000	1,200,000	-----	-----
1906 -----	15,992,000	1,345,000	-----	-----
1907 -----	16,304,000	1,450,000	6,000,000	1,250,000
1908 -----	14,500,000	1,500,000	6,800,000	1,000,000
1909 -----	16,000,000	1,800,000	7,500,000	1,200,000
1910 (est.) -----	14,000,000	1,300,000	5,950,000	750,000

Fresno County also produced about 150,000 gallons of dry wine in 1909, and the same in 1910, and about 40,000 gallons of grape juice.

There are twenty-six wineries in Fresno County, including one Japanese winery at Fowler, and twenty-nine distilleries. The proportions of the various kinds of sweet wines produced in Fresno County are approximately as follows:

Port -----	3,300,000
Sherry -----	1,950,000
Angelica -----	320,000
Muscat -----	200,000
Tokay -----	95,000
Malaga -----	85,000
Total -----	5,950,000

DRIED AND CANNED FRUITS.

(Approximate quantities and average prices.)

DRIED FRUITS.

Fruit.	1909.	1909.	1910.	Price.	
	Quantity, tons.	Per pound, cents.	Quantity, tons.	Lowest. Cents, per pound.	Highest.
Apricots -----	750	7 to 8½	1,000	7	10
Figs -----	2,100	2 to 2½	3,000	2½	4½
Nectarines -----	450	3½ to 5	500	4	6
Peaches -----	8,500	3½ to 5	7,500	4	5½
Pears -----	100	5 to 7	100	6	8
Plums -----	50	4 to 6	30	5	7
Prunes -----	750	1½ to 2½	200	2½	4½

GREEN FRUIT—CANNED AND SHIPPED.

Fruit.	Tons.	Lowest and highest price, 1910, per ton.	
		Lowest.	Highest.
Apricots -----	400	\$20 00	\$30 00
Peaches -----			
Tuscan Clings -----	1,500	22 50	-----
Orange Cling -----	2,700	12 00	20 00
Phillips Cling -----	3,000	15 00	25 00
Early Crawford -----	-----	-----	-----
Early Foster -----	800	15 00	20 00
Muir's, Freestone -----	900	15 00	20 00
Lovells -----	1,600	15 00	20 00
Elbertas -----	1,000	15 00	20 00
Plums -----	400	20 00	30 00

FIGS.

The quantity of figs in Fresno takes the lead, has much improved of late years, and the fruit appears to be growing in favor.

The quantity packed in Fresno in the last six years has been:

Year.	Tons.
1905 -----	2,500
1906 -----	2,700
1907 -----	3,300
1908 -----	3,800
1909 -----	2,100
1910 -----	3,000

BEES AND HONEY.

In 1899, Fresno produced 567,800 pounds of honey; in 1908, 777,050 pounds; the estimated crop for this season being considerably less.

FISH AND GAME.

The varieties of fish include salmon, black bass, trout, and catfish, all of which are plentiful.

There is an abundance of game, including quail, doves, a large variety of ducks and wild geese, but there is no means at present of ascertaining either the quantity or money value of either fish or game. The sums received for hunting licenses, however, are considerable, in 1908-9 being \$3,657, and in 1909-10, \$4,194.

THE LUMBER INDUSTRY.

The value of this industry to the county is very considerable, varying from sixty to seventy-five million feet, board measure, with an average value of some two million dollars a year. The different varieties are approximately as follows:

Year.	Sugar pine.	White pine.	Fir.	Sequoia.	Total.
1905 -----	9,000,000	6,000,000	30,000,000	15,000,000	60,000,000
1906 -----	9,000,000	6,000,000	30,000,000	15,000,000	60,000,000
1907 -----	10,000,000	5,000,000	35,000,000	20,000,000	70,000,000
1908 -----	9,000,000	4,000,000	35,000,000	10,000,000	58,000,000
1909 -----	11,000,000	6,000,000	30,000,000	-----	47,000,000

NOTE—Feet, board measure.

The price of lumber was about 10 per cent higher in 1909 than in the previous year.

For the year 1910, the exact figures can not yet be given, but the total lumber cut amounts to between 65,000,000 and 70,000,000 feet, and taking into account the shakes, shingles and trays made at different mills, would bring the total to 75,000,000 feet, which, at a conservative estimate, would be worth about \$1,500,000.

MANUFACTURES OF FRESNO.

The great increase in the manufactures of Fresno is due chiefly to the increase in the canning and preserving of fruits and vegetables, the value of products for which amounted to \$6,942,440, and formed 70.5 per cent of the total value of all the manufacturing industries of the city. Most of the fruit preserving of Fresno is by the drying or evaporating process, and the greatest part is in raisins, in which Fresno leads the world.

NUMBER OF ESTABLISHMENTS.

1905 -----	\$4
1900 -----	62
Per cent of increase -----	35.5
Capital:	
1905 -----	\$3,501,808
1900 -----	1,435,263
Per cent of increase -----	144.0
Wage-earners:	
1905 average number, 1951; wages -----	\$1,085,926
1900 average number, 819; wages -----	395,586
Per cent of increase, 138.2; per cent of increase -----	174.5
Value of products:	
1905 -----	\$9,849,001
1900 -----	2,752,201
Per cent of increase -----	257.9

There are several foundries, agricultural and implement works, iron works, macaroni and soap factories, and many others, which have come into existence or been greatly extended during the last two years.

MINERALS.

Fresno county is rich in minerals, but as yet, little has been done to develop what some day will be a great and prosperous industry. Gold, silver, copper, antimony, iron, bismuth, chrome, magnesite, building stone, and mineral waters are among the minerals awaiting utilization. The copper deposits that have so far been in any way worked are all near the northern side of the county.

VALUE OF MINERAL PRODUCTS IN THE LAST FIVE YEARS.

Substance.	1905.	1906.	1907.	1908.	1909.
Asphalt -----				\$5,000	\$4,400
Brick -----	\$60,000	\$64,000	\$57,320	106,960	49,375
Copper -----	224,640	88,000	50,000		111,341
Gold -----	40,037	8,943	2,401	1,054	
Granite -----			10,500	16,900	14,400
Granite -----			10,500	16,900	14,400
Magnesite -----					8,500
Silver -----	9,187	83	26	11	
Petroleum -----	2,400,000	1,974,470	3,620,120	5,898,964	9,243,971
Potter's clay -----				26,000	
Macadam, tons -----					45,375
Totals -----	\$2,734,164	\$2,135,046	\$3,740,397	\$6,055,389	\$9,445,978

Substance	1907.	Quantity. 1908.	1909.
Asphaltum (tons) -----		500	400
Brick (millions) -----	9,230	13,220	7,950
Clay (tons) -----		9,000	
Copper (pounds) -----	250,000		876,837
Gold (value) -----	\$2,041	\$1,054	
Magnesite (tons) -----			850
Petroleum (barrels) -----	9,050,300	10,725,389	15,406,619
Silver (value) -----	\$26	\$11	
Granite, (cubic feet) -----	9,200	16,900	18,000
Macadam (value) -----			\$14,000

The figures for 1910 are not yet complete.

COALINGA OILFIELDS.

In the last ten years the production of petroleum in Fresno County has developed from a small beginning into one of its most important industries.

In 1907 only 70,140 barrels were produced. The production now is 15,406,619 barrels.

STATISTICS OF FRESNO COUNTY, 1909-10.

General Statistics.		General Statistics—Continued.	
Area 6,035 square miles, or 3,862,400 acres.		Number of miles of public roads	2,400
Number of farms in 1900.....	3,290	Road levy per \$100, 1910.....	38c
Number of acres assessed.....	2,684,926	Value of county buildings.....	\$1,260,000
Value of country real estate... \$28,860,648		Irrigating ditches—miles.....	450
Of improvements thereon..... \$6,601,333		Railroads, steam—miles, 269;	
Of city and town lots..... \$7,919,333		assessed value.....	\$6,305,702
Of improvements thereon..... \$6,372,437		Railroads, electric—assessed	
Of personal property..... \$8,781,040		value.....	\$137,375
Total value of all property... \$65,263,510		Electric power plants—1; as-	
Expended on roads, last fiscal		assessed value.....	\$146,795
year.....	\$245,341	Electric power lines—miles,	
Expended for bridges, last fis-		140; assessed value.....	\$60,271
cal year.....	\$9,171	Number of acres irrigated—	
		upwards of.....	400,000

STATISTICS OF FRESNO COUNTY, 1909-10—Continued.

Cereal Products and Hay.			Wines, Brandies, Etc.		
	Acres.			Gallons.	
Wheat	8,400		Dry wines	150,000	
Barley	7,500		Sweet wines	5,950,000	
Oats	1,800		Brandy	750,000	
Total cereals	17,700		Grape juice	40,000	
Alfalfa hay	57,800		Number of wineries, including one Japanese at Fowler, 26; number of distilleries, 29; number of breweries, 1.		
Grain and grass hay	6,700				
Total hay	64,500				
Number of Fruit Trees and Vines.			Live Stock Industry.		
	Bearing.	Non-bearing. Total.		Number.	Value.
Apple	20,000	4,800	24,800	Cattle—Beef	2,370 \$71,100
Apricot	145,600	11,300	656,900	Stock	22,600 271,200
Fig	126,000	23,000	149,000	Dairy cows	32,860 657,200
Lemon	21,500	9,000	30,500	Thoroughbred—	
Nectarine	30,000	660	30,660	Angus	218 10,900
Olive	42,500	5,300	47,800	Calves	9,210 46,050
Orange	89,400	10,300	99,700	Swine	7,482 29,930
Peach	3,270,000	760,000	4,030,000	Horses—Thoroughbred	127 38,400
Plum	10,600	2,360	12,960	Common	14,976 599,040
Prune	83,000	5,600	88,600	Colts	1,830 36,600
Total fruit..	3,838,600	832,320	4,671,920	Jacks and jennies ...	60 1,200
Almond	9,000	2,300	11,300	Mules	3,246 256,950
Grapevines ...	88,400	15,075	103,475	Sheep	54,130 109,310
				Lambs	26,730 26,730

GLENN COUNTY.

Glenn County, originally a part of Colusa County, was incorporated May 11, 1891. It lies near the center of the Sacramento Valley, extending from the summit of the Coast Range across the Sacramento eastward, containing 1,550 square miles, one third being mountainous, but affording good summer pasturage for stock. About the same area is in the foothills with many fertile ranches and the remaining third practically a level valley floor of wonderfully fertile soil which has for the past forty years been continuously cropped to grain and still continues to produce good crops.

The average temperature for the year is 64° Fahrenheit. The coldest is 25° above zero, and the highest 115°. The maximum temperatures are reached in July and August and are of short duration, generally lasting from one to three days, the usual maximum being not greater than 110°. The relative humidity, however, is low, greatly reducing the sensible temperature. The nights are always cool, there being a daily range of temperature during the hot months of from 25° to 30°. The rainfall averages about 17 inches annually, and comes between the months of October and April. The climate is particularly suited to the growth of fruits of all kinds, and with the abundant rich feed makes possible an even unchecked growth of live stock.

The United States Reclamation Service has installed a system to irrigate 14,000 acres of the fertile lands about the town of Orland. This project is designed as a model irrigation system, and was undertaken by the reclamation service to demonstrate the benefits of irrigation under perfect conditions of soil and climate. The works consist of an impounding dam, situated at East Park in Colusa County, a diversion dam at the Buttes in Tehama County, and 99 miles of canals and main laterals, about 100 miles of small field ditches, all constructed by the United States under the supervision of its own engineers; the cost of the works is charged against the land, to be repaid in ten annual installments without interest. The impounding dam is now completed and awaits the winter flood water to fill the reservoir, which has a capacity of 45,000-acre feet of water, which will be released during the dry months to supplement the natural stream flow of Stony Creek. This water is carried 40 miles to the diversion dam at a point where the creek debouches upon the plains. Here the water is turned through the headgates into main canals. The diversion dam is fifty per cent complete, the ditches and canals eighty per cent complete, and work is being pushed so as to furnish water for the season of 1911. By the terms of the contracts the Government required of the owners before undertaking the project that this land must be sold in tracts of 40 acres or less. The approximate cost of \$650,000 will be distributed over ten years and charged to at least 14,000 acres; the annual charge for construction will be less than \$5.00 per acre. The dam and system are now so nearly complete that many acres will be added to the already profitable groves of oranges and lemons, and fields of alfalfa.

The United States Soil Survey describes the soil as "deep, friable and

productive and adapted to a wide range of fruit and field products and especially those produced under irrigation and intensive farming." With a normal rainfall one crop of grain or three crops of alfalfa are produced—with irrigation alfalfa is harvested from four to six times, yielding from six to ten tons to the acre. The yield of the crops is also correspondingly increased. Owing to the extensive system of grain farming, and the very limited number of small irrigated farms, the average farm in Glenn County up to the past year was over 1,000 acres, necessitating a rather sparse population. The population in 1900 was but 5,150, and while the yearly increase has been good, only during the past year has the real awakening begun.

The great irrigation project of the Sacramento Valley Irrigation Company, with headquarters at Willows, together with that of the United States Government at Orland, has revolutionized things. Their lands are now being sold in 20, 40, and 80 acre lots, and a vast number of settlers are coming in daily.

Willows, the county seat, is 150 miles north of San Francisco on the main line of the Southern Pacific and 80 miles from Sacramento, the State capital. The population of Willows is over 3,400, the increase in the past year being almost 100 per cent. Always an important commercial point for what has in the past been one of the great grain producing sections of the State, not until the Sacramento Valley Irrigation Company established here their headquarters were the great possibilities really fully appreciated. There is great activity in building both residences and business houses, and the opportunity for profitable investment is magnificent. Six religious denominations are represented in Willows, the Baptist, Episcopal, Methodist, Catholic, Christian, and Presbyterian. Educational facilities are the best there are, being a grammar school and a high school. Present conditions, however, point to additional schools in another year.

Orland is 15 miles north of Willows on the main line of the Southern Pacific. It is a thrifty, prosperous town of about 1,200 inhabitants. The United States Government is developing an irrigation project here of about 14,000 acres. Here is also located an experimental station, consisting of about 10 acres. Considerable activity exists in the sale of farm lands and the town is growing fast. Orland has three churches, the Methodist, Baptist, and Catholic, a high school and grammar school, and all other conveniences for an up-to-date growing community.

Hamilton City came into existence in 1905 with the building a \$1,000,000 sugar beet factory. It is located on a branch line of the Southern Pacific and Northern Electric railroads. It is quite a flourishing and progressive town of about 800 inhabitants, having churches, school, electric lights and telephone, etc. The sugar beet factory has a capacity of 700 tons per day, working 400 men. The other railroad towns are Germantown and Fruto.

Realizing it is equally as important to take care of the waste water as is the supplying of it, the irrigation company as they construct their canals and laterals are building a great drainage system. All checks and gates in the canals and laterals are of concrete construction, water being delivered to the highest boundary of each 40-acre tract. With roadways, too, around each 160 acres. There is now ready for water over 1,500 acres and it is their intention to have fully 20,000 additional ready by May, 1911.

The Orland project, while the smallest yet undertaken by the United States Reclamation Service, is complete in itself and will irrigate about 15,000 acres. It is regarded now as one of the units in a general system, and will likely be materially enlarged at no distant day.

The county roads are excellent. They are graded, graveled, and kept in splendid condition; the gravel in all parts of the county being particularly adapted to road making.

Great impetus has been given the dairy industry, and with the alfalfa now being planted and the number of pure bred stock being bought, together with the many natural advantages, Glenn County will soon take her place as one of the great dairy centers of the State. It also means further interest in the way of hogs and chickens. The latter, however, is now receiving considerable individual attention in the way of the establishment of several large poultry farms. With the planting, too, of large acreages to alfalfa the bee industry is also beginning to attract considerable attention.

Professor Elwood Mead of the United States Experiment Station at one time and in charge of irrigation investigations, now the head of the department of irrigation of Australia, said: "Within a radius of five miles in the Sacramento Valley I saw every product of the temperate and semitropical zones which I could call to mind. Apples and oranges grew side by side, as did oak and almond and walnut trees. There were olives from the south and cherries from the north. A date palm seemed equally at home with an alfalfa meadow, figs and Tokay grapes were apparently as much in their element as the fields of wheat and barley or the rows of Indian corn, some of the stock of which measured 15 feet in height. All of these things could have been grown on a single acre and doubtless have been."

Every yard has its orange and lemon trees, some being cared for and irrigated, the most of them, though, not; still all do well and produce delicious fruit. At Orland there are several orange groves from six to ten years old, and all doing exceedingly well. Peaches, apricots, cherries, pears, prunes, olives, figs, grape, and nuts of all kinds yield in the greatest abundance, whereas in the foothills can be found some of the best apples that can be grown anywhere. Now that irrigation is at hand, large acreages will also be planted to orchard.

Soil and climatic conditions in Glenn County are particularly well adapted to the culture of grapes, and the United States Department of Agriculture has recently arranged to establish an experimental station near Willows where extensive experimental work in grape culture will be carried on.

This is one of the most promising industries of the county. The presence of a great sugar factory, a sure crop, a live market, and a cash return make it truly an attractive proposition. The beet reaches its highest perfection here and as prices are highest when the sugar content is greatest, the industry here nets splendid returns per acre. The yield is from 10 to 25 tons per acre with the sugar content as high as 27 per cent.

A Nevada corporation purchased several sections between Willows and Germantown in the spring of 1908 and planted 60,000 eucalyptus trees, which are now from six to fifteen feet high. Notwithstanding the lack of irrigation and the small amount of rainfall the past two seasons,

the loss has only been two per cent. They are growing vigorously and show great possibilities.

The Sacramento Valley Irrigation Company, coöperating with the United States Government, planted a three-acre patch to forty different varieties of rice about one mile south of Willows the past spring. The greater portion has already been harvested and is of exceptional quality, all, too, yielding abundantly. The government experts pronounce it equal to any that is grown in the great rice states. The Sacramento Valley Irrigation Company will continue the experiment on a larger scale the coming year. Mr. Z. S. Spaulding, too, a large land owner is arranging to seed an acreage of about 150 acres and to irrigate with pumps. Every indication points to a great future for this industry.

Experiments have also been made with flax, sufficient to demonstrate the fact that it can be made a profitable crop. Cotton, too, shows it can be grown to advantage. In fact, there are few of the necessities or luxuries that grow out of the ground that can not be successfully produced in Glenn County.

Sandstone, cement, manganese, and copper possibilities still lie unworked only waiting capital and intelligent effort to make them exceedingly profitable.

Glenn County is the hunter's paradise. Black bass, striped bass, salmon, perch, catfish, trout, and many other varieties abound in the Sacramento River, and the mountain streams are full of speckled trout, while the heavy growth of brush along the river banks and in the foothills is full of quail, deer, squirrels, and other game, whereas from the middle of November to the first of March, when the wild geese and ducks come into winter quarters, good sport is enjoyed, the hunters killing them by the hundreds.

Glenn County is indeed forging ahead and offers wonderful possibilities in every line for the homeseeker or investor.

STATISTICS OF GLENN COUNTY, 1909-10.

General Statistics.		Number of Fruit Trees and Vines.		
		Bearing.	Non-bearing.	Total.
Area 1,545.09 square miles, or 989,344 acres.				
Number of farms	1,223			
Number of acres assessed	687,808			
Value of country real estate.....	\$9,457,409			
Of improvements thereon	\$570,810			
Of city and town lots	\$548,791			
Of improvements thereon	\$333,360			
Of personal property	\$1,755,947			
Total value of all property.....	\$14,068,293			
Expended on roads, last fiscal year	\$70,707			
Expended for bridges, last fiscal year	\$92,838			
Number of miles of public roads	511			
Value of county buildings.....	\$140,000			
Irrigating ditches — miles, 182; cost	\$750,000			
Drainage ditches—miles, nearly 136				
Railroads, steam—miles, 55.78; assessed value	\$1,378,665			
Railroads, electric — miles, 4.9; assessed value	\$23,211			
Electric power lines—miles 63; assessed value	\$52,940			
Number of acres irrigated.....	6,580			
Dairy Industry.				
	No. Production.	Value.		
Creameries	2 182,333	\$85,629		
Apple	3,350	755	4,105	
Apricot	4,475	310	4,785	
Cherry	385	70	455	
Fig	2,780	1,140	4,920	
Lemon	4,025	480	4,505	
Nectarine	48	40	88	
Olive	1,715	410	2,125	
Orange	6,890	1,975	8,865	
Peach	5,880	910	6,790	
Pear	2,815	825	3,640	
Plum	865	545	1,410	
Prune	6,985	411	7,396	
Quince	68	.....	68	
Total fruit..	40,281	7,871	49,152	
Almond	7,370	650	8,020	
Chestnut	10	.....	10	
Pecan	34	10	44	
Walnut	3,135	710	3,845	
Total nut ...	10,549	1,370	11,919	
Grapevines ...	35,350	2,700	38,050	
Berries, acres.	42	15	15	

STATISTICS OF GLENN COUNTY, 1909-10—Continued.

Fruits, Vegetables, Etc.

	Total Production. Pounds.	Value.
Green—		
Apples	160,300	\$3,200
Apricots	78,700	1,574
Blackberries	17,500	875
Beans	36,900	1,476
Beets	2,150	65
Cabbage	8,500	170
Cauliflower	5,850	451
Corn	148,250	1,482
Cherries	2,750	275
Figs	56,100	1,683
Grapes	561,600	1,920
Lemons (boxes)	640	1,446
Loganberries	48,200	1,471
Onions	147,150	9,050
Oranges (boxes)	3,620	346
Olives	16,400	2,142
Pears	107,100	2,246
Peaches	112,300	248
Peas	5,200	286
Persimmons	2,840	214
Plums	8,550	4,860
Irish potatoes	485,950	1,044
Sweet potatoes	52,200	156
Prunes	10,400	390
Raspberries	6,550	810
Strawberries	16,100	508,700
Tomatoes	508,700	5,087
Totals	2,570,500	\$49,943
Dried—		
Almonds	80,310	\$9,637
Figs	1,250	62
Prunes	76,400	1,528
Totals	157,960	\$11,227

Fish Industry.

	Pounds.	Value.
Salmon	48,150	\$3,852
Other kinds	11,200	896
Totals	59,350	\$4,748

Cereal Products and Hay.

	Tons of 2,000 pounds.		Value.
	Acres.	Bushels.	
Wheat	17,695	317,510	\$266,708
Barley	55,680	1,169,280	549,551
Oats	755	18,875	12,202
Rye	40	760	456
Corn	560	21,280	13,300
Total cereals..	74,730	1,602,435	\$842,217
	Acres.	Tons.	Value.
Alfalfa hay	4,535	13,405	\$81,630
Grain hay	12,850	17,850	122,950
Total hay ...	17,385	31,255	\$204,580

Live Stock Industry.

	Number.	Value.
Cattle—Stock	10,654	\$159,810
Dairy Cows—Graded..	1,642	41,050
Thoroughbred—		
Herefords	5	1,000
Holsteins	12	1,800
Jersey	44	4,400
Calves	2,471	24,710
Swine	9,081	49,405
Horses—Thoroughbred	3	3,000
Common	2,485	124,250
Colts	1,011	30,330
Jacks and jennies	4	1,200
Mules	2,487	248,700
Sheep	91,380	274,140
Angora goats	4,855	9,710
Total stock	126,134	\$973,505
Wool (pounds)	448,300	67,245
Mohair (pounds)	24,275	6,075
Poultry and Eggs.		
	Doren.	Value.
Chickens	5,164	\$20,656
Ducks	209	1,254
Geese	18	216
Turkeys	638	12,072
Eggs	112,300	2,246
Total value		\$36,444

Forest Products.

	Amount.	Value.
Area of timber lands (acres)	100,390	\$501,950
Sawmills (number) ...	1	4,000
Fuel, wood (cords)....	2,790	16,740
Lumber (feet)	840,000	16,800
Total value		\$539,490

Miscellaneous Products.

	Pounds.	Value.
Bees (hives)—No. 482.		\$1,446
Broomcorn	208,800	10,400
Honey	3,200	320
Sugar beets (tons) ...	20,005	100,025

Manufactories.

In Glenn County there are one steam-power plant and four electrical-power plants. It has one brickyard, one cement product factory, two cigar factories, one sewer pipe factory, two planing mills, and one beet sugar factory. It turns out 119,000 pounds of crackers, and 85,000 pounds of lard.

HUMBOLDT COUNTY.

Humboldt County, a veritable empire in itself, has long laid virtually undisturbed, in the northwestern part of California. There is no section in the Golden State to-day where natural resources give so great an opportunity for development. But having no rail connection with the outside world, the stream of homeseekers pouring into the west has never been directed toward this region, though it presents as great attractions as many other parts of the Pacific coast. This, though, will soon be a thing of the past—the Northwestern Pacific Railroad Company is rapidly laying the rails that will connect this county with the rest of the State, and by this time next year the outside world will commence to learn that there is such a place in California as Humboldt County. Having increased from 27,104 to 33,857 in the last ten years under our present conditions, who can foretell what our population will be at the end of the next ten years, with railroad connection with the rest of the country?

While the greater portion of the county's surface is hilly, there is considerable level land around Humboldt Bay and along the numerous rivers which flow down the mountains to the ocean. All of this land, both hill and dale, is very fertile and productive, and is principally utilized for farming, dairying, and fruit raising. While fruit raising, at this time, is in its infancy, with a railroad outlet in a short time it will be its chief industry. The fact has been well established that here can be raised as good fruit of all kinds as in the State. Fruit grown here is nearly altogether free from insect pests; the codling moth, which is so ruinous to the apple business in a great many localities, is wholly unknown here.

Considerable over one hundred thousand boxes of choice apples are annually shipped out of the county. A great variety of berries grow in profusion in all parts where cultivated, and immense quantities of wild blackberries, huckleberries, and strawberries grow in almost every section of the county.

Humboldt County, while not particularly noted as an agricultural county, yields perhaps the largest returns per acre of vegetables, hay and grains, of any locality on the Pacific coast. No year has yet been seen when this county has had too little rainfall for its needs or enough to damage its crops. The average rainfall being 47.55 inches per annum.

There are abundant streams and springs throughout the county, which furnish plenty of pure water to its inhabitants the year around and render irrigation absolutely unnecessary.

Lumbering is the chief industry of the county, the exports of our lumber and shingle mills, and sash and door factories aggregating 250,000,000 feet yearly besides that which is used at home, which is considerable. There are over 5,000,000 acres of heavily timbered land on which there is estimated to be over 50,000,000 feet.

Stock raising is carried on extensively throughout the county, and

is one of its most important industries. The exports of this business bringing in about \$500,000 annually.

The growing of wool is also an important industry, exports being nearly 600,000 pounds per year.

Gold mining is carried on to some extent along the Klamath and Trinity rivers, the annual output being over \$100,000.

Good building stone, such as granite and sandstone, is found in many localities. All the granite used in our court house being a home product.

Among other industrial pursuits carried on within the county are shipbuilding, salmon fishing, leather making and the gathering of tanbark.

There are three daily, seven weekly, and one semi-weekly newspapers published in the county.

We have 122 public schools and employ about 200 teachers. Of the above four are high schools. There are about sixty churches in the county.

Two notable buildings have been finished within the last year at Eureka, namely a Federal building, just completed at a cost of \$118,000 and the most beautiful "Elk's Home" in the State.

STATISTICS OF HUMBOLDT COUNTY, 1909-10.

General Statistics.				Fruits, Vegetables, Etc.		
Area 3,507 square miles, or 2,244,480 acres.					Total Production.	
Number of acres assessed	1,600,502				Pounds.	Value.
Value of country real estate	\$17,053,210			Green—		
Of improvements thereon	\$1,250,660			Apples	11,500,000	\$175,000
Of city and town lots	\$4,693,425			Apricots	4,000	80
Of improvements thereon	\$2,898,125			Blackberries	400,000	18,000
Of personal property	\$3,253,757			Beans	14,000	420
Total value of all property	\$29,149,177			Beets	700,000	3,200
Expended for bridges, last fiscal year	\$23,500			Cabbage	220,000	3,300
Number of miles of public roads	1,200			Celery	24,000	1,200
Road levy per \$100, 1910	60c			Cauliflower	26,000	7,800
Value of county buildings	\$375,000			Corn	40,000	2,000
Railroads, steam—miles, 145; assessed value	\$1,149,170			Currants	4,000	160
Railroads, electric—miles, 12; assessed value	\$65,450			Cherries	54,000	2,700
Electric power plants—2; assessed value	\$156,513			Gooseberries	4,000	200
Electric power lines—miles, 92; assessed value	\$49,680			Grapes	4,400	85
Pacific Telegraph & Telephone Company's property	\$36,676			Loganberries	8,000	480
Western Union's property	\$4,215			Onions	6,000	120
				Pears	68,000	1,360
				Peaches	105,000	2,100
				Peas	40,000	1,200
				Plums	10,000	2,100
				Irish potatoes	6,200,000	48,500
				Prunes	640,000	4,800
				Quinces	6,500	195
				Raspberries	7,000	560
				Strawberries	80,000	8,000
				Tomatoes	350,000	7,100
				Totals	20,514,900	\$290,660
				Dried—	Pounds.	Value.
				Apples	50,000	\$2,500
				Beans	9,000	270
				Prunes	30,000	1,500
				Walnuts	3,000	450
				Totals	92,000	\$4,720
				Wines, Brandies, Etc.	Gallons.	Value.
				Beer (barrels)	15,230	
				Cider	43,275	\$6,491
				Vinegar	28,400	5,680
				Number of breweries, 1.		

STATISTICS OF HUMBOLDT COUNTY, 1909-10—Continued.

Cereal Products and Hay.

	Tons of 2,000 pounds.		Value.
	Acres.	Bushels.	
Wheat	165	4,950	\$4,950
Barley	615	24,600	14,760
Oats	1,840	64,400	30,912
Total cereals..	2,620	93,950	\$50,622
			Value.
	Acres.	Tons.	
Alfalfa hay	212	1,272	\$19,080
Grain hay	5,220	10,440	125,280
Grass hay		6,370	63,700

Fish Industry.

	Pounds.	Value.
Salmon	2,340,000	\$107,090
Other kinds	101,380	10,138
Totals	2,441,380	\$117,138

Dairy Industry.

	Production.	Value.
Butter (pounds)	4,600,000	\$1,610,000
Cheese (pounds)	200,000	40,000
Condensed milk (lbs.) ..	1,199,260	167,896
Casein	500,000	50,000
Creameries, 12; skimming stations, 15.		

Forest Products.

	Amount.	Value.
Area of timber lands (acres)	1,100,000	.....
Various kinds (acres)	188,000	\$940,000
Pine (acres)	464,500	2,323,500
Redwood (acres)	447,500	8,950,000
Sawmills (number)	18	.....
Fuel, wood (cords)	70,000	210,000
Laths (thousand)	17,000	42,500
Lumber (feet)	265,550,000	\$3,982,250
Pickets (pieces)	84,000	1,680
Piles	3,940	11,820
Posts (pieces)	87,300	10,476
Railroad ties (pieces) ..	468,000	.....
Sash and door fac-tories (number)	7	.....
Shakes (thousand)	15,450	154,500
Shingles (thousand)	725,000	1,087,500
Stave bolts (cords)	1,800	14,400

Total value \$5,516,126

Power used for mills and manufactories in county—Steam (number), 95; electrical (number), 5.

Live Stock Industry.

	Number.	Value.
Cattle—Beef	3,590	\$125,650
Stock	22,145	332,175
Dairy Cows—Graded..	16,681	667,240
Thoroughbred—		
Holsteins	90	9,000
Jersey	360	36,000
Calves	10,135	101,350
Swine	6,145	61,450
Horses—Thoroughbred	5	5,000
Standard-bred	420	42,000
Common	5,840	358,400
Colts	820	24,600
Mules	345	13,800
Sheep	66,500	199,500
Lambs	25,200	50,400
Angora goats	250	7,500
Common goats	2,800	8,400

Total stock 161,326 \$2,042,465
Wool (pounds) 591,050 \$153,870

Poultry and Eggs.

	Dosen.	Value.
Chickens	6,410	\$32,050
Ducks	215	1,290
Geese	84	756
Turkeys	307	4,605
Eggs	500,000	150,000

Total value \$188,701

Miscellaneous Products.

Bees (hives)—Number, 500; value, \$1,500.

Manufactories.

	No.	Number of Employees.	Value of Products.
Brick	3	20	\$60,000
Cigars	8	33	90,000
Confectionery	5	.....	.....
Cooper-shops	2	.....	.....
Foundries and iron works	3	98	220,000
Marble	2	.....	.....
Tanneries	3	.....	200,000
Tiling	2	.....	.....
Woolen mills	1	.....	.....

Manufactured Output.

	Quantity.
Cigars (thousand)	16,000
Hides (pounds)	45,000
Lard (pounds)	800,000
Tallow (barrels)	100

IMPERIAL COUNTY.

Imperial is the youngest county in the State, having been formed in 1907 from the eastern part of San Diego County, formerly known as the "Colorado Desert, or Imperial Valley." The progress of the county is practically confined to the central part of the valley.

Dairying is very profitable, owing to the fact that we have alfalfa growing throughout the winter, that furnishes an abundant supply of green pasturage. We have modern creameries with latest appliances, that are located in different sections. The stock used for dairying purposes is of a very high grade, mostly pure-bred representatives of the milk strains.

Imperial Valley is one of the best stock, hog and poultry producing countries in the West, and there are also various other industries which are receiving considerable attention.

There is reason to believe that the cultivation of cotton may hold a most important part in the industrial development of Imperial County, and those interested feel greatly encouraged over the outlook.

The center of this wonderfully fertile valley is reached by a spur from the main line of the Southern Pacific Railroad.

The most important towns of the valley are Imperial, El Centro, Holtville, Brawley, and Calexico. There are located in these towns seven strong banking institutions. The hotel accommodations are excellent, and there are a number of sunny modern lodging houses. The school and church accommodations of the valley are excellent.

Imperial Valley is 110 miles long by 40 miles wide, half in California, half in Mexico. Present irrigated area, 40 by 25 miles in California.

Irrigated from Colorado River; 50,000 miner's inches are available.

Area of irrigable land in Imperial County, 400,000 acres. In cultivation, 200,000 acres.

Length of canals, about 600 miles. Average rainfall, 4.4 inches.

STATISTICS OF IMPERIAL COUNTY, 1909-10.

General Statistics.		Cereal Products and Hay.			
Area 4,000 square miles, or 2,560,000 acres.		Tons of 2,000 pounds.			
Number of farms	42,000	Acres.		Tons.	
Number of acres assessed.....	621,953	Wheat	512	10,333	\$12,400
Value of country real estate....	\$6,029,669	Barley	46,073	1,298,500	737,160
Of improvements thereon	\$285,043	Oats	124	6,118	1,960
Of city and town lots	\$1,388,385	Rye	235	7,720	2,760
Of improvements thereon	\$586,255	Corn	5,127	170,900	102,540
Of personal property	\$1,314,214	Total cereals.	52,071	1,493,571	\$856,820
Total value of all property.....	\$9,603,566	Alfalfa hay	32,703	.....	\$1,187,208
Expended on roads, last fiscal year	\$48,798	Grain hay	1,354	.....	18,248
Expended for bridges, last fiscal year	\$26,012	Total hay	34,057	.....	\$1,205,456
Number of miles of public roads	1,250	Fruits, Vegetables, Etc.			
Road levy per \$100, 1910.....	40c	Total Production.		Pounds.	
Value of county buildings.....	\$25,000	Green—	Pounds.		Value.
Irrigating ditches.—miles, 900; cost	\$3,500,000	Asparagus	510,000	.....	\$102,000
Railroads, steam—miles, 160; assessed value	\$3,380,349	Grapes	6,000,000	.....	120,000
Telegraph—miles, 271; assessed value	\$38,448	Onions (12 acres).....	96,000	.....	1,920
Electric power plants—1; assessed value	\$70,640	Egg plant	64,000	.....	1,920
Electric transmission lines—miles, 34; assessed value.....	\$31,800	Cantaloupe (crates), 1,200 acres	120,000	.....	250,000
Number of acres irrigated.....	207,360	Total value .....	.....	.....	\$472,840
Telephone—miles, 84; assessed value	\$2,000	Dairy Industry.			
		Production.		Value.	
		Butter (pounds)	2,738,425	.....	\$958,349

STATISTICS OF IMPERIAL COUNTY, 1909-10—Continued.

Number of Fruit Trees and Vines.

	Bearing.	Non-bearing.	Total.
Apple	119	149	268
Apricot	4,149	11,086	15,235
Cherry	43	157	200
Fig	475	1,075	1,551
Lemon	250	497	747
Olive	100	2,090	2,190
Orange	300	2,098	2,398
Peach	285	966	1,251
Pear	365	2,786	3,151
Plum	859	60	919
Prune	65	379	444
Quince	2,250	902	3,152
Other kinds	282

Total fruit..	9,260	22,528	31,788
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Grapevines (acres)	1,000
Cottonwood trees	100,000
Eucalyptus trees	359,299

Poultry and Eggs.

	Dosen.	Value.
Chickens	2,673	\$13,365
Turkeys	171	2,052
Eggs	127,680	31,920
Total value		\$47,337

Live Stock Industry.

	Number.	Value.
Cattle—Beef	1,380	\$27,600
Stock	4,729	94,580
Dairy Cows—Graded..	8,640	432,000
Thoroughbred	150	9,000
Ayrshire, common ..	746	29,840
Calves	2,129	11,317
Swine	34,292	342,920
Horses—Thoroughbred	30	7,500
Standard-bred	2,480	372,000
Common	2,290	171,900
Colts	920	46,000
Jacks and jennies	4	850
Mules	1,382	138,200
Sheep	14,755	44,265
Lambs	1,100	1,100

Total stock	75,027	\$1,729,072
Wool (pounds)	140,000	70,000

Manufactories.

	No. Employees.	Value of Products.
Brick	2	60
Confectionery	10	14
Power used for mills and manufactories in county—Steam (number), 6; electrical (number), 1; water (number), 1; gasoline cotton gins (number), 5.		

Manufactured Output.

	Pounds.	Value.
Bees (hives)—Number	2,528	\$12,640
Beeswax	5,750	1,440
Cotton	4,500,000	685,000
Honey	690,000	41,400
Cotton seed	9,000,000	90,000

KERN COUNTY.

Kern County, lying in the southern end of the San Joaquin Valley, its easterly boundary extending on to the Mojave Desert over the extreme southerly end of the Sierra Nevada Mountains, is the second largest county in the State and probably has the most diversified resources of any.

At Randsburg, on the eastern border, is one of the largest gold mines on this coast, and the country around Randsburg has many smaller mines that are free-milling ore, which make them paying properties for people or corporations of small means.

Along the southern border where the line crosses the San Emidio Mountains are large deposits of iron ore and antimony, which are yet undeveloped, and along the western side of the county are the Sunset, Midway, and McKittrick oil fields, lying along the eastern base of the Coast Range Mountains, and which promise to yield untold wealth in their future production of oil.

In the northern part of the county, and surrounding the town of Delano, is a large body of good land which is now attracting considerable attention from investors, as development has shown that within a few feet of the surface lies an unlimited quantity of water, which can be raised to the surface to transform the arid plains into orchards and alfalfa fields.

In the northeastern part of the mining town of Kernville, surrounded by good mines, and near it on the south fork of the Kern River is the South Fork Valley, where numerous prosperous stockmen have their alfalfa fields that furnish feed to the stock that pasture in the high Sierras in the summer time.

In the center and surrounding the town of Bakersfield, the county seat, lie thousands of acres of fertile land that are irrigated by Kern River, and which are mostly used to raise stock and alfalfa, but will produce anything that can be raised where there is good land and an abundance of sunshine.

The Federal census, as just reported, furnishes convincing proof as to the marvelous growth of Kern County, the figures being 37,715, a gain of 128.85 per cent over the census of ten years ago. This growth was not confined to any one section of the county, though greatest in the oil fields and Bakersfield, but the valley farming section showed a great increase. Nor is such growth confined to the irrigated lands, a big increase being noted in the territory dependent upon raising water from the subterranean streams.

The details set forth in the following report compared with the figures of previous years tell the story of increasing acreage cultivation which promises a greater output in cereals, fruits and alfalfa than every before.

In the oil fields the development work is continuous, besides the proven territory where the work is steadily progressing, an entirely

new field, Lost Hills, is being exploited and the discoveries there indicate that the petroleum bearing territory is continuous from Sunset to the north line of the county.

Conditions affecting labor are most favorable. The rapid upbuilding of Bakersfield is furnishing employment to many skilled laborers and in the oil fields thousands of men are at work at remunerative wages. The increase in farm products, the larger oil output and big pay rolls are all contributing to the continuous prosperity of the county, and promise to make for still greater progress in the future.

STATISTICS OF KERN COUNTY, 1909-10.

General Statistics.

Area 8,100 square miles, or 5,184,000 acres.	
Number of farms	1,500
Number of acres assessed	2,987,753
Value of country real estate	\$24,325,739
Of improvements thereon	\$4,329,605
Of city and town lots	\$2,443,828
Of improvements thereon	\$2,683,690
Of personal property	\$11,908,548
Total value of all property, including railroad	\$52,350,546
Expended on roads, last fiscal year	\$103,585
Expended for bridges, last fiscal year	\$15,790
Number of miles of public roads	1,600
Road levy per \$100, 1910	35c
Value of county buildings	\$267,000
Irrigating ditches—miles, 209; cost	\$447,090
Railroads, steam—miles, 544.54; assessed value	\$6,659,138
Railroads, electric—miles, 7½; assessed value	\$58,500
Electric power plants—3; assessed value	\$2,506,590
Electric power lines—miles, 144½; assessed value	\$473,820
Number of acres irrigated	140,000
Total value of all property includes railroads, by State board.	

Number of Fruit Trees and Vines.

	Bearing.	Non-bearing.	Total.
Apple	1,200	5,000	17,000
Apricot	25,000		25,000
Cherry	1,000		1,000
Fig	1,000		1,000
Lemon	500	500	1,000
Nectarine	1,000		1,000
Olive	5,000		5,000
Orange	6,500	20,000	26,500
Peach	50,000	8,000	58,000
Pear	1,500		1,500
Plum	6,000		6,000
Prune	41,000		41,000
Quince	500		500
Other kinds	200		200

Total fruit..	151,200	33,500	184,700
Almond	2,500		2,500
Pecan	200		200
Walnut	250		250
Total nut ...	2,950		2,950
Grapevines ..	1,100		1,100
Berries, acres.	65		65

Dairy Industry.

	Production.	Value.
Butter (pounds)	557,980	\$178,000
Creameries, 3.		

Fruits, Vegetables, Etc.

	Total Production. Pounds.	Value.
Green—		
Apricots	600,000	\$6,000
Oranges (boxes)	12,000	18,000
Peaches	400,000	3,000
Totals	1,012,000	\$27,000
Dried—		
Almonds	40,000	\$2,800
Apricots	20,000	14,000
Peaches	240,000	9,600
Prunes	120,000	3,600
Raisins	920,000	23,000
Totals	1,340,000	\$53,000
Canned—		
Apricots	800	\$2,520
Grapes	100	290
Pears	50	370
Peaches	2,100	7,350
Plums	75	225
Totals	3,125	\$10,755

Live Stock Industry.

	Number.	Value.
Cattle—*Beef	28,000	\$1,120,000
Stock	62,000	1,240,000
Dairy Cows—Graded..	3,300	115,500
Calves	10,000	100,000
Swine	10,000	110,000
Horses—Thoroughbred	17	16,000
Common	8,500	750,000
Colts	1,100	50,000
Mules	1,700	170,000
Sheep	180,000	810,000
Lambs	90,000	180,000
Total stock	394,615	\$4,661,500
Wool (pounds)	1,900,000	190,000

Cereal Products and Hay.

	Tons of 2,000 pounds.	Value.
	Acres.	
Wheat	10,000	\$160,000
Barley	33,000	332,500
Corn	7,000	134,400
Total cereals	50,000	\$626,900
Alfalfa hay	18,500	\$185,000
Grain hay	15,000	180,000
Total hay	33,500	\$365,000

*The beef cattle were mostly shipped out of the county, many of them having been shipped into the county for feeding purposes.

REPORT OF THE STATE AGRICULTURAL SOCIETY.

STATISTICS OF KERN COUNTY, 1909-10—Continued.

Poultry and Eggs.			Manufactured Output.		
	Dozens.	Value.			Quantity.
Chickens	6,000	\$24,000	Brick (thousand)		6,990,748
Ducks	200	1,200	Cigars (thousand)		538,000
Geese	40	400	Flour (barrels)		18,720
Turkeys	500	7,500	Lime (barrels)		90,000
Eggs	300,000	60,000	Hides (pounds)		739,645
			Tallow (pounds)		383,155
Total value		\$93,100	Soap (pounds)		70,000
No mention made in the above except poultry farms.			Forest Products.		
			Area of timber lands 10,000 acres, not owned by the government; mostly pine.		
			Sawmills, 2.		
			Lumber, 650,000 feet, value \$13,000.		
			Two small mills to supply the demand in the mountain districts.		
			Miscellaneous Products.		
Manufactories.				Pounds.	Value.
	No. Employees.	Value of Products.			
Brick	1	50	Bees (hives)—Number	8,000	\$32,000
Cigars	2	20	Beeswax	2,000	500
Confectionery	2	6	Flowers and plants		
Flouring mills	1	15	(acres), roses	30	15,000
Foundries and iron works	3	102	Honey	192,000	9,200
Lime	3	75	Alfalfa seed	140,000	21,000
Meat products—					
Hides		72,795			
Tallow		29,370			

LAKE COUNTY.

By her sister counties, Lake has long been cheerfully accorded the title of "The Switzerland of America," owing to her beauty of scenery. The county is located in the heart of the Coast Range, about 100 miles north of San Francisco, and is about 75 miles long and 25 miles wide. Mount St. Helena guards the southern extremity. Clear Lake is a splendid sheet of fresh water 25 miles long and from 2 to 10 miles broad; with the lake surface at an elevation of 1,350 feet about sea level, and having a depth sufficient to float vessels of considerable tonnage and draft, receiving in its basin the waters from several streams of considerable flow. It is stocked with an amazing wealth of native food fishes and bordered by smiling valleys of great fertility, by orchards of luscious fruit, by gently swelling slopes, by rugged mountains, by wild canyons, touched with a certain savage beauty, and bearing upon its heaving breast a constantly increasing proportion of the internal commerce of the community. Clear Lake is the pride of Lake County, as well as the source of its name.

Although classed as mountainous, Lake County has a number of very fertile valleys, some of them being of large area. Artesian water is obtainable in profuse quantities, and with comparatively small outlay of money or effort. Fields are growing luxuriant crops of grain, though annually sown in the same crop for more than a half century. A variety of soils is found throughout the county, and even the valleys show differences. Generally, the valleys are rich with alluvium, but in places there are extensive tracts of adobe, black and heavy, and apparently inexhaustible in productiveness. Occasionally, a sandy loam is found in the valleys, especially in the neighborhood of the streams traversing the county at short intervals. On the plateau crowning the low foothills which ring the valleys is a lighter soil, and when cleared is capable of raising large vineyards and orchards of peaches, prunes, etc. The rocky hillsides furnish pasture for flocks of Angora goats.

Large bodies of sugar and yellow pine, fir, cedar, and oak give employment to several sawmills and furnish the home market a good quality of lumber.

The minerals have heretofore been represented by the quicksilver industry, although gold, silver, copper, and oil have been discovered in small quantities. Besides quicksilver, immense quantities of mineral water have been bottled at the many mineral springs and shipped to all parts of the country. The several mineral springs are the sites for as many health resorts, as many as thirty thousand guests being entertained from all parts of the country each summer. Some of them go to the resorts for their health, the bright, clear atmosphere being very beneficial, and the waters frequently having a highly curative property in certain complaints. Others seek the deer, the fishing, and other sports. Among the resorts are Bartlett, Highlands, Adams, Harbin, Zeigler, Witter, and Anderson Springs; Blue Lakes, Laurel Dell,

Hobergs, Soda Bay, Glenbrook, Carlsbad, Saratoga, Bonanza, Astorg, England, Howard, and Bynum.

There are several mines from which large amounts of quicksilver have been taken. Natural gas is found. There are large deposits of sulphur and of borax in some parts of the county.

STATISTICS OF LAKE COUNTY, 1909-10.

General Statistics.

Area 1,332 square miles, or 852,480 acres.	
Number of farms	1,008
Number of acres assessed.....	365,429
Value of country real estate.....	\$2,057,722
Of improvements thereon	\$528,850
Of city and town lots	\$247,845
Of improvements thereon	\$282,450
Of personal property	\$380,676
Total value of all property.....	\$3,646,189
Expended on roads, last fiscal year	
Expended for bridges, last fiscal year	\$15,738
Number of miles of public roads	589
Road levy per \$100, 1910.....	50c
Value of county buildings	\$32,500
Irrigating ditches (miles).....	17
Electric power plants (number)	1
Electric power lines (number).....	3
Number of acres irrigated.....	160

Cereal Products and Hay.

Tons of 2,000 pounds.		
Acres.	Bushels.	Value.
Wheat	3,933	79,326
Barley	3,566	92,953
Oats	1,185	21,211
Rye	5	130
Corn	343	13,656
Acres.		Value.
Alfalfa hay	1,520	\$34,800
Grain hay	4,143	55,900
Grass hay	1,015	10,650

Live Stock Industry.

	Number.	Value.
Cattle—Beef	1,582	\$51,805
Stock	3,563	71,260
Dairy Cows—Graded..	790	24,700
Calves	1,280	9,200
Swine	6,030	51,125
Horses—Thoroughbred	7	8,000
Standard-bred	102	16,000
Common	1,820	117,500
Colts	425	14,850
Jacks and jennies	22	3,050
Mules	220	22,500
Sheep	9,205	30,252
Lambs	2,620	5,825
Common goats	9,882	24,240
Wool (pounds)	65,830	\$12,206
Mohair (pounds)	35,020	8,180

Forest Products.

	Amount.	Value.
Area of timber lands (acres)	48,000	\$240,000
Sawmills (number)	9	12,500
Charcoal (sacks)	150	100
Fuel, wood (cords)	5,860	25,440
Lumber (feet)	2,036,000	36,000
Posts (pieces)	6,100	615
Sash and door factories (number).....	1	5,000
Shakes (number)	80,000	1,200

Power used for mills and manufactories in county—Steam (number), 16; electrical (number), 4; water (number), 3.

Dairy Industry.

	Production.	Value.
Butter (pounds)	100,500	\$37,135
Cheese (pounds)	154,750	37,117
Creameries, 5.		

Poultry and Eggs.

	Dosen.	Value.
Chickens	2,171	\$9,080
Ducks	29	145
Geese	19	235
Turkeys	550	16,500
Eggs	213,210	42,642

Number of Fruit Trees and Vines.

	Bearing.	Non-bearing.	Total.
Apple	19,650	1,050	20,700
Apricot	2,570	115	2,685
Cherry	1,135	115	1,250
Fig	475	100	575
Nectarine	215	25	240
Olive	3,760	200	3,960
Orange	193	4	197
Peach	4,970	275	5,245
Pear	41,690	8,625	50,315
Plum	1,997	100	2,097
Prune	57,750	1,000	58,750
Quince	260	20	280
Almond	9,250	700	9,950
Chestnut	21		21
Pecan	10		10
Walnut	1,690	1,080	2,770
Other nuts	315		315
Grapevines	394,640	43,600	438,240
Berries, acres	28		28

Fruits, Vegetables, Etc.

	Total Production.	Value.
	Pounds.	
Green—		
Apples	2,214,450	\$13,024
Apricots	26,000	685
Blackberries	29,000	1,190
Beans	15,250	710
Beets	61,000	310
Cabbage	29,600	760
Celery	4,000	200
Cauliflower	2,000	100
Corn	67,000	590
Currants	200	10
Cherries	16,000	890
Figs	11,600	272
Gooseberries	2,000	50
Grapes	950,000	2,500
Loganberries	6,700	429
Nectarines	8,400	223
Onions	18,000	360
Olives	20,000	500
Pears	1,271,000	22,505
Peaches	131,300	2,686
Peas	5,000	300
Persimmons	400	10
Plums	11,000	150
Irish potatoes	727,500	9,805
Quinces	7,100	121
Raspberries	3,500	205
Strawberries	17,500	1,490
Tomatoes	87,500	1,045

	Pounds.	Value.
Dried—		
Almonds	74,800	8,340
Apples	22,000	1,320
Beans	2,000	100
Onions	44,000	720
Pears	611,600	55,044
Peaches	2,400	200
Plums	25,000	500
Prunes	1,476,000	38,580
Walnuts	11,500	1,245
Yerba Santa	40,000	800
Canned—		
Beans	30,000	67,500

STATISTICS OF LAKE COUNTY, 1909-10—Continued.

Wines, Brandies, Etc.			Manufactories.		
	Gallons.	Value.		Number of No. Employees.	Value of Products.
Dry wines	51,150	\$4,680	Wood boxes	2 6	\$1,700
Sweet wines	150	30	Cigars	1	600
Vinegar	1,100	250	Confectionery	1 1	500
Number of wineries, 12.			Flouring mills	3 7	52,502
			Hides .....	.. ..	10,000
Miscellaneous Products.			Planing mills	3 5	6,000
	Pounds.	Value.	Quicksilver	2 28	58,725
Bees (hives), number.	275	\$500			
Honey	6,500	812	Manufactured Output.		
Hops	30,000	3,000			Quantity.
Alfalfa seed	240,410	30,389	Flour (barrels)		8,745
Clover seed	200	40			
Mineral water	40,000	167,000			

LASSEN COUNTY.

Lassen County lies in the northeastern part of California along the Nevada line. It is traversed from south to north by the Nevada-California-Oregon Railway (narrow gauge), which connects at Reno, Nevada, with the Southern Pacific system. Susanville, the county seat, is in Honey Lake Valley, a little south of the center of the county. Lassen embraces large areas, comprising rich valley lands, suited to agriculture; rolling hills and uplands, affording splendid range for stock; and mountain table-lands covered with timber.

The county two years ago had a population of only about 5,000. It could easily support many times that number. The assessment roll now foots over five and a half millions. The county has no debt, and the tax rate is low. The people are generally well-to-do and prosperous. The bank at Susanville, with a capital of \$50,000, has more than \$300,000 on deposit, which shows a condition of easy finances.

The principal present industries are farming and stock raising. There are paying mines in the county, but as a whole Lassen is not mineral. Timber lands which are not in forest reserves are now generally held in private ownership, but as yet the manufacture of lumber has not been commenced. But farming and stock raising will always be the principal industries of the county. Climate and soil are particularly adapted to them.

The altitude of the largest, most fertile and most productive valleys, such as Honey Lake Valley, Big Valley, and Long Valley, is a little over 4,000 feet. Other large valleys, like Madeline Plains, Willow Creek Valley, and Secret Valley, are in the neighborhood of 5,000 feet above sea level. While the high valleys are not as well adapted to general farming as the lower ones, they are quite productive, and well suited to the stock raising business. The climate generally is similar to that of the northeastern states, so far as range of temperature is concerned, but our summer season is quite dry, making irrigation necessary as a rule. With irrigation, where the altitude is not too great, any of the ordinary products of the temperate zone can be produced in abundance and of fine quality. Apples, pears, cherries, peaches, apricots, and berries of all kinds do splendidly. Of farm products, alfalfa is probably the most important, though native grasses, timothy, and redtop are extensively raised.

Good hay and grass and pure cold water make the county an ideal one for dairying. There are a number of creameries in the county, and their product commands the top price in city markets.

Improved farm lands range in price from \$25 to \$100 or more per acre.

District schools are scattered all over the county. A county high school is located at Susanville. There are quite a number of churches in the county, including Methodist, Baptist, Catholic, and others. Three weekly newspapers are published—the Lassen Advocate and Lassen Weekly Mail at Susanville, and the Big Valley Gazette at Bieber.

Susanville is the largest town. It has a good and abundant water supply and good facilities for fighting fire. Its stores are well stocked, and goods are sold at reasonable prices. Business buildings, as a rule, are substantial, and residences handsome.

Lassen County has a range of temperature wide enough to give a

pleasing variety to the season. Health conditions are fine. Pulmonary diseases are very rare, and malaria almost unknown. There are still large quantities of land open for entry, which, with water for irrigation, will make good farms and homes. There is plenty of water to irrigate these lands.

STATISTICS OF LASSEN COUNTY, 1909-10.

General Statistics.				Live Stock Industry.			
Area 4,690 square miles, or 3,001,105 acres.				Number.		Value.	
Number of farms			750	Cattle—Beef	9,000	\$360,000	
Number of acres assessed			802,910	Stock	35,000	700,000	
Value of country real estate			\$4,126,865	Dairy Cows—Graded ..	150	6,000	
Of improvements thereon			\$429,559	Calves	10,000	80,000	
Of city and town lots			\$89,590	Swine	3,000	21,000	
Of improvements thereon			\$117,432	Horses—Thoroughbred ..	21	63,000	
Of personal property			\$1,167,141	Standard-bred	76	22,800	
Total value of all property			\$7,272,217	Common	7,500	750,000	
Expended on roads and bridges, last fiscal year			\$40,000	Colts	1,565	31,300	
Number of miles of public roads ..			1,300	Jacks and jennies	75	7,500	
Road levy per \$100, 1910			40c	Mules	300	30,000	
Value of county buildings			\$47,000	Sheep	29,000	87,000	
Irrigating ditches (miles)			150	Lambs	25,000	50,000	
Railroads, steam—miles, 165.58; assessed value			\$1,137,161	Angora goats	500	2,000	
Number of acres irrigated			30,000	Common goats	500	1,200	
Cereal Products and Hay.				Total stock	121,687	\$2,212,100	
Tons of 2,000 pounds.				Forest Products.			
	Acres.	Tons.	Value.	Amount.		Value.	
Wheat	12,000	4,500	\$135,000	Area of timber lands (acres)	240,000	\$2,500,000	
Barley	3,000	1,000	30,000	Sawmills (number) ..	10	30,000	
Oats	2,500	800	20,000	Lumber (feet)	4,500,000	60,000	
Rye	1,500	600	24,000	Posts (pieces)	15,000	1,500	
Corn	60		1,200	Railroad ties (pieces) ..	100,000		
Total cereals	19,060	6,900	\$210,200	Sash and door factories (number)	1		
Alfalfa hay	20,000	80,000	\$400,000	Total value		\$2,591,500	
Grain hay	1,200	3,000	16,000	Power used for mills and manufactories in county—Steam (number), 16; electrical (number), 1; water (number), 3.			
Grass hay	90,000	150,000	600,000	Wines, Brandies, Etc.			
Total hay	111,200	233,000	\$1,016,000	Cider, 130 barrels. Beer, 500 barrels. Number of breweries, 1.			
Fruits, Vegetables, Etc.				Miscellaneous Products.			
	Total Production. Pounds.		Value.	Pounds.		Value.	
Green—Apples	100,000		\$2,000	Bees (hives)—Number ..	1,000	\$1,200	
Apricots	6,000		120	Honey	2,000	200	
Asparagus	300		30	Alfalfa seed	500,000	80,000	
Blackberries	2,500		200	Manufactories.			
Beans	1,200		50	No.		Number of Employees.	
Beets	20,000		450	No.		Value of Products.	
Cabbage	75,000		1,500	Confectionery	2	4	
Celery	1,000		140	Flouring mills	3	8	\$40,000
Cauliflower	2,000		40	Furniture	1	1	
Corn	20,000		400	Jewelry	3	4	
Currants	2,500		50	Leather goods	2	4	
Gooseberries	1,000		30	Planing mills	2	8	
Grapes	500		30	Manufactured Output.			
Loganberries	200		20	Flour (barrels)		Quantity.	
Nectarines	1,000		30	Number of Fruit Trees and Vines.		8,000	
Pears	7,000		200	Bearing.		Non-bearing.	
Peaches	30,000		800	15,000		8,000	
Plums	6,000		60	Apple	15,000		23,000
Irish potatoes	6,600,000		132,000	Apricot	500	250	750
Sweet potatoes	500		25	Cherry	750	350	1,100
Prunes	1,200		30	Nectarine	150	100	250
Quinces	500		5	Peach	2,000	2,000	4,000
Raspberries	7,000		500	Pear	500	250	750
Strawberries	1,500		150	Plum	400	150	550
Tomatoes	50,000		1,250	Prune	750	350	1,100
Totals	6,942,900		\$140,310	Total fruit			31,500
Dairy Industry.				Walnut	100	50	150
	Production.		Value.	Grapevines ..	250	150	400
Butter (pounds)	500,000		\$140,000	Acres—			
Cheese (pounds)	80,000			Raspberries ..	15	10	25
Creameries, 4.				Blackberries ..	15	15	30
Poultry and Eggs.				Strawberries ..	15	10	25
	Dosen.		Value.	Gooseberries ..	8	5	13
Chickens	1,500		\$9,000	Loganberries ..	3	5	8
Ducks	20		200	Dewberries ..	2	3	5
Geese	10		240	Currants	4	3	7
Turkeys	500		12,000				
Total value			\$21,440				

LOS ANGELES COUNTY.

In wealth, population, and resources Los Angeles is the most important county in southern California. There are two rivers in the county, the Los Angeles and the San Gabriel. During a large part of the year these are dry beds of sand, what little water they contain finding its way through the porous sand to the bedrock. In the winter they are dangerous streams. The Los Angeles River rises in the western part of the San Fernando Valley, about 12 miles northwest of the city, and flows easterly 18 miles to the Los Angeles pass. Its stream is fed all along by springs. Two other "rivers," the Pacoima and the Tejuanga, join it in the San Fernando Valley. Turning south, it flows through the Los Angeles Pass, and on through the city.

Los Angeles County embraces within its limits a great variety of scenery and climate. Within its territory may be found the climate and scenery of almost every part of the State, from the cool and breezy seashore to the warm inland plains and bracing mountain tops. Of the area of the county, about four fifths is capable of cultivation, the remainder being mountainous. The shore line is 85 miles in length. Nine tenths of the population is within thirty miles of the ocean.

The marvelous growth which has been made during the past few years may be seen from the statement that, within the space of twenty-four years, the population of the county has increased more than tenfold, and the assessed valuation of property in proportion.

The chief industry is horticulture, the list of products including everything that can be grown in the State, and most everything that can be raised in semitropic countries. The area of land devoted to horticultural purposes is being rapidly extended as the large tracts are subdivided and improved.

The county is well provided with transportation facilities. A dozen lines of railroad center in Los Angeles City, tapping almost every section of the county, while coast steamships call regularly at the leading seaports.

Perhaps the most important enterprise for Los Angeles is the big breakwater by the Federal Government at San Pedro. By means of this breakwater the depth of water over the bar will be so increased as to permit ocean-going vessels to come to the wharves, and Los Angeles will then be able to compete for its share of the growing Oriental trade. Other shipping points of the county are Port Los Angeles, near Santa Monica, and Redondo.

The San Gabriel Valley, a choice section of Los Angeles County, has the Sierra Madre Range on the north. The mountains are grand and precipitous, inclosing the valley like a wall. This valley is the best known of any portion of southern California. Even before there was any "boom" here worthy of mention, lands in the valley commanded a comparatively high price. As with most attractive sections, the level-headed mission fathers discovered its advantages, and founded the San Gabriel Mission—whose church is still in good preservation—in 1771. Now railroads traverse the valley, and the land is rapidly being trans-

formed into a succession of small homes and thriving little cities. The valley contains 100 square miles of territory. The San Gabriel contains some of the choicest fruit lands in southern California, and is largely devoted to the raising of oranges and lemons, as well as deciduous fruits.

Pasadena, a beautiful city, is located at the foot of the Sierra Madre Range, about seven miles from Los Angeles. Within twenty years Pasadena has grown from a sheep pasture to a city of beautiful homes, with a world-wide reputation. Other settlements in the valley are Alhambra, Monrovia, Duarte, and Azusa, all of which are mainly supported by horticulture.

Adjoining San Gabriel Valley on the east is Pomona Valley. Irrigation is cheaply supplied to this section from the San Antonio River. The soil and climate are particularly adapted to the culture of citrus fruits. Railroad facilities are very good, and increasing, which has caused the valley to settle up rapidly. It contains a number of flourishing towns, the chief of which is Pomona, one of the most thriving cities of southern California. For miles in every direction around Pomona extend continuous orchards of oranges, lemons, apricots, peaches, prunes, olives, and other fruit trees, a specialty being made of olive culture.

Other important sections of the county are Los Nietos Valley, a well-watered district, noted for corn, alfalfa, and dairy products; the stretch of country between Los Angeles City and the ocean; San Fernando Valley, north of Los Angeles, in which a large amount of fine wheat is raised; and Antelope Valley, an elevated region in the northern part of the county, where land is cheap and, with water, very productive.

Los Angeles enjoys railroad competition in the shape of three trans-continental lines. The Pacific Coast Steamship Company runs vessels every few days from Los Angeles County ports to San Francisco and San Diego.

There is a great variety of soil in Los Angeles County, varying from light sandy loam to heavy adobe.

A mistaken idea prevails to some extent that farming is only carried on in Los Angeles County by means of irrigation, and that without it crops would be a failure. For grain and winter crops irrigation is not employed. Corn is irrigated in some localities, being a summer crop, but is successfully grown in many places without irrigation. Upon some lands, after a crop raised without irrigation has been harvested, another is raised by means of irrigation. On irrigated land two or three crops a year are frequently raised. With an artificial supply of water, the farmer is rendered independent of the season's rain, while the product of his land is enormously increased.

The development of the horticultural industry during the past few years has been remarkable. The most important horticultural product is the orange. Besides the orange and lemon, the principal fruits raised are the almond, fig, prune, apricot, walnut, peach, pear, and berries.

Deciduous fruits are shipped fresh, canned, dried, and crystallized. An active demand for our dried fruits has grown up in Europe.

Alfalfa, which is largely grown for hay, is a most remarkable forage plant. It is cut from three to six times a year. Large quantities of wheat and barley are raised. Corn sometimes grows to a height of

twenty feet. Pumpkins have been raised weighing over 400 pounds. There is a beet sugar factory at Alamitos. Los Angeles honey is celebrated all over the country. In the neighborhood of Los Angeles call lilies, tuberoses, carnations, and other flowers are grown by the acre. Hundreds of acres are devoted to the cultivation of the celery, which is shipped East by the train load. Winter vegetables, such as string beans, tomatoes, green peas, and chili peppers, constitute a big business.

Until only a few years ago, most of the butter consumed in southern California was imported from the North and East. This is no longer the case, a number of creameries having been established during the past few years, with most successful results.

Poultry does well in Los Angeles County when it is given the same attention it receives in the East. Eggs always command a good price.

Ostriches are raised for their plumes, and the industry is profitable. There is a large ostrich farm at South Pasadena.

Among the game found in the country are wild geese, ducks, snipe, rabbits, squirrels, foxes, deer, wildcats, California lions, and bear, the latter being found in the northern part of the county.

The angler finds plenty of trout in the mountain canyons. In the ocean there is excellent fishing, both with line and seine, and some remarkable catches are made. The yellowtail, ranging from 15 to 80 pounds, is very numerous in the waters of the Pacific. The tuna attains a length of five feet or more, and a weight of from 100 pounds upward. "Jewfish" are sometimes caught weighing 400 pounds.

Although Los Angeles County is chiefly noted as a horticultural section, its mineral wealth is by no means unimportant. Including petroleum, it ranks fourth in mineral products among the counties, and is the only one which leads in five mineral products. Los Angeles is the center of a number of rich mineral fields in southern California which annually produce many millions of dollars.

One of the most remarkable features of development in Los Angeles County has been the greatly increased production of petroleum. For over twenty-five years petroleum has been produced on a limited scale in Los Angeles and Ventura counties, but it is only within the past few years that the industry has assumed great importance. The oil produced in California differs from that of the Eastern states, being of a heavier grade, with an asphaltum base, and it is used almost exclusively for fuel. It has been adopted by most of the leading factories of this section, and is used largely by the railroads. A careful test made with a locomotive showed that oil at \$1 a barrel is equivalent to coal at \$4 a ton.

The school facilities of Los Angeles are especially good. Besides the complete system of public schools, private schools and colleges abound in Los Angeles, Pasadena, and other towns. Many Eastern people avail themselves of the opportunity to send children with a tendency to weak lungs to a country where plenty of out-of-door exercise is a possibility every day in the year. Most of the leading religious denominations are represented, not only by scores of churches, but also by one or more religious colleges. The work of the schools is further supplemented by an army of specialists in music, painting, and every department of art. The Chautauqua has an active membership of nearly a thousand, and meets annually at Long Beach. Lectures and other entertainments, by

home and foreign talent, are of almost daily occurrence. The educational and social facilities afforded by Los Angeles are, in the widest sense of the word, unsurpassed. Public libraries are numerous and well stocked with the latest works.

Catalina Island is a most attractive and popular resort in the Pacific, just off the coast of Los Angeles County. Between this resort and Los Angeles City there is a most excellent rail and boat service.

STATISTICS OF LOS ANGELES COUNTY, 1909-10.

General Statistics.				Fruits, Vegetables, Etc.		
Area 3,880 square miles, or 2,483,200 acres.					Total Production Pounds.	Value.
Number of farms	10,322			Green—		
Number of acres assessed	1,025,109			Apples	3,232,100	\$71,802
Value of country real estate	\$72,090,225			Apricots	4,900,000	98,000
Of improvements thereon	\$6,389,405			Asparagus	8,000	800
Of city and town lots	\$251,712,990			Blackberries	1,114,285	66,857
Of improvements thereon	\$110,092,830			Beans	1,320,000	46,200
Of personal property	\$82,226,104			Beets	345,000	3,450
Total value of all property	\$522,511,554			Cabbage	6,830,000	68,300
Expended on roads, last fiscal year	\$645,275			Celery	910,000	18,200
Expended for bridges, last fiscal year	\$47,772			Cauliflower	4,987,000	99,740
Number of miles of public roads	4,220			Corn (dozen)	287,000	43,375
Road levy per \$100, 1910	60c			Cherries	21,800	1,090
Value of county buildings	\$2,349,846			Figs	1,039,000	25,975
Irrigating ditches—miles, 1,143; cost	\$587,000			Gooseberries	41,000	2,460
Railroads, steam and Pullman—miles, 617.520; assessed value	\$8,889,005			Grapes	37,500,000	450,000
Railroads, electric—miles, 567; assessed value	\$15,761,125			Grape fruit (boxes)	18,000	49,500
Electric power plants—8; assessed value	\$1,938,658			Lemons (boxes)	1,233,000	2,500,000
Electric power lines—miles, 1,157.50; assessed value	\$4,110,020			Loganberries	278,850	22,308
Number of acres irrigated	97,778			Nectarines	82,700	1,654
Cereal Products and Hay.				Onions	260,000	9,100
Tons of 2,000 pounds.				Oranges (boxes)	2,767,000	7,500,000
	Acres.	Bushels.	Value.	Pears	830,000	20,750
Wheat	31,326	626,520	\$601,472	Peaches	5,600,000	76,600
Barley	58,000	1,288,889	800,400	Peas	1,700,000	68,000
Corn	14,000	270,000	266,490	Persimmons	8,000	467
Total cereals	103,326	2,185,409	\$1,668,362	Plums	2,100,000	42,000
Alfalfa hay				Irish potatoes	7,670,000	115,050
	Acres.	Tons.	Value.	Sweet potatoes	1,126,000	25,335
Alfalfa hay	21,000	105,000	\$945,000	Prunes	800,000	20,000
Grain hay	116,600	174,900	2,011,350	Quinces	29,000	2,465
Total hay	137,600	279,900	\$2,956,350	Raspberries	108,570	9,770
Number of Fruit Trees and Vines.				Strawberries	10,842,000	433,680
	Bearing.	Non-bearing.	Total.	Tomatoes	12,500,000	125,000
Apple	141,070	20,362	161,432	Totals { pounds 106,183,305		
Apricot	192,876	21,690	214,566	boxes 4,018,000		
Cherry	3,289	830	4,119	dozens 287,000		
Fig	86,600	2,100	88,700	Dried—		
Lemon	786,360	62,730	849,090		Pounds.	Value.
Nectarine	3,286	600	3,886	Almonds	198,000	\$31,680
Olive	342,880	21,687	364,567	Apricots	810,000	60,750
Orange	2,210,123	216,750	2,426,873	Beans	18,300,000	777,750
Peach	286,727	3,982	290,709	Onions	1,700,000	51,000
Pear	72,930	882	73,812	Peaches	782,000	70,380
Plum	51,860	830	52,690	Peanuts	6,000	390
Prune	52,800	700	53,500	Prunes	95,000	9,025
Quince	5,630	210	5,840	Raisins	983,000	32,766
				Walnuts	9,800,000	1,568,000
Total fruit	4,236,431	353,353	4,589,784	Totals		
Almond	150,600	890	151,490		32,674,000	\$2,601,741
Chestnut	250	110	360	Canned—		
Pecan	1,800		1,800		Cases.	Value.
Walnut	310,300	81,812	392,112	Apples	850	\$1,900
Other nuts	290,600		290,600	Apricots	18,600	184,080
Total nut	753,550	82,812	836,362	Blackberries	1,255	2,600
Grapevines	5,693,000		5,693,000	Beans	11,500	23,000
Berries, acres	3,912		3,912	Grapes	180	450

STATISTICS OF LOS ANGELES COUNTY, 1909-10—Continued.

Wines, Brandies, Etc.

	Gallons.	Value.
Dry wines	1,200,000	\$300,000
Sweet wines	1,486,000	445,800
Beer (barrels)	216,444	1,455,552
Brandy	140,000	280,000
Vinegar	47,000	9,400

Number of wineries, 86; number of breweries, 3.

Dairy Industry.

	Production.	Value.
Butter (pounds)	4,962,000	\$1,488,600
Cheese (pounds)	998,000	174,650

Creameries, 19; skimming stations, 9.

Live Stock Industry.

	Number.	Value.
Cattle—Beef	5,872	\$265,370
Stock	21,800	763,000
Dairy Cows—Graded..	37,280	1,864,000
Thoroughbred—		
Guernsey	310	31,000
Herefords	250	25,000
Holsteins	400	40,000
Jersey	375	37,500
Shorthorns	150	11,250
Calves	12,200	146,400
Swine	21,830	327,450
Horses—Thoroughbred	1,080	263,000
Common	30,000	122,000
Colts	14,000	281,000
Jacks and jennies	350	3,500
Mules	7,816	468,960
Sheep	47,000	235,000
Lambs	21,000	78,750
Angora goats	680	6,800
Common goats	4,300	21,500
Total stock	228,403	\$6,089,480
Wool (pounds)	322,000	48,300

Poultry and Eggs.

	Dosen.	Value.
Chickens	81,733	\$588,477
Ducks	5,800	52,200
Geese	2,900	34,800
Turkeys	7,800	234,000
Eggs	3,836,655	1,150,996

Total value

\$2,060,473

Forest Products.

Timber Lands—Cedar, oak, pine, mesquite, and redwood, 587,520 acres, mostly in forest reserve.

	Amount.	Value.
Fuel, wood (cords)....	12,000	\$96,000

Power used for mills and manufactories in county—Steam (number), 218; electrical (number), 782.

Miscellaneous Products.

	Pounds.	Value.
Bees (hives), number.	82,000	\$196,000
Beeswax	26,100	6,525
Flowers and plants		
(acres)	650	659,319
Honey	33,000	1,980
Alfalfa seed	30,000	5,000
Garden seed	2,780	11,750
Sugar beets (tons)	60,000	300,000

Fish Industry.

	Pounds.	Value.
All kinds	6,682,500	\$400,950

Manufactories.

	No. Employees.	Value of Products.
Bookbinderies	18	260
Paper boxes	5	230
Wood boxes	4	120
Brick	14	962
Brooms	3	35
Carriages and		
wagons	48	1,820
Cigars	67	324
Clothing	486	3,020
Coffee, spices, etc..	13	110
Confectionery	73	910
Cooper-shops	3	52
Crackers	3	388
Electrical supplies ..	22	306
Flouring and cereal		
food mills	7	253
Foundries and iron		
works	29	1,800
Furniture	23	200
Jewelry	42	280
Leather goods	22	283
Machinery	47	860
Meat products—		
Hides		587,991
Lard		864,595
Meat packed	5	770
Tallow		135,000
Olive oil	5	86
Paper	1	15
Pickles	7	179
Pickled olives	4	86
Iron pipe	5	300
Sewer pipe	3	150
Planing mills	61	2,100
Potteries	8	153
Salt	3	76
Soap	5	218
Artificial stone	4	69
Granite	11	80
Syrups and extracts.	9	67
Tanneries	2	25
Tiling	1	40
Tin and galvanized		
iron	42	200
Willow and wooden		
ware	2	50
Wood turning and		
carving	3	21

Manufactured Output.

	Quantity.
Brick (thousand)	141,224
Brooms (dozen)	22,000
Cigars (thousand)	10,000
Crackers (pounds)	8,000,000
Flour (barrels)	295,000
Hides (pounds)	4,231,009
Lard (pounds)	8,648,603
Meat packed (pounds)....	65,787,941
Tallow (barrels)	5,987
Olive oil (gallons)	178,000
Pickles (gallons)	910,000
Salt (tons)	14,386
Soap (pounds)	8,255,000

MADERA COUNTY.

Madera County is in the center of the San Joaquin Valley, bounded on the north by Merced and Mariposa counties, on the southeast and west by Fresno County. The eastern portion of the county extends far up in the Sierra Nevada Mountains. From the foothills to the San Joaquin River, a distance of about forty miles, the land is level and adapted to all kinds of agricultural pursuits. The melting snows of the mountains flow through numerous small creeks, into the San Joaquin River, or serve to supply the farming section with water for irrigation. The higher mountains are heavily timbered with valuable wood, principally sugar and white pine. Lumbering, stock raising, quarrying, mining, fruit growing, and farming are the principal industries. There are two large wineries in the county. All kinds of fruit yield heavily on the irrigated lands. Minerals are iron, copper, gold, and silver. The power plant of the San Joaquin Light and Power Company is near North Fork, this county. The granite quarries at Knowles furnish employment to about 300 men. The product is said to be the best in the State. San Francisco post office and many other public and business buildings in various cities of the State are built of the granite from these quarries.

The county seat is Madera, and the other towns of the county are Raymond, Grub Gulch, Brenda, North Fork, Sugar Pine, O'Neals, Gold, Coarse Gold, Fresno Flats, Minturn, and Knowles.

STATISTICS OF MADERA COUNTY, 1909-10.

General Statistics.

Area 2,200 square miles, or 1,408,000 acres.	
Value of country real estate....	\$5,906,065
Of improvements thereon	\$628,870
Of city and town lots	\$355,940
Of improvements thereon	\$301,990
Of personal property	\$1,480,500
Total value of all property....	\$8,673,620
Expended on roads, last fiscal year	\$25,309
Expended for bridges, last fiscal year	\$9,444
Road levy per \$100, 1910	35c
Irrigating ditches—miles, 130; cost	\$45,000
Railroads, steam—miles, 77.4; assessed value	\$130,505
Electric power plants—1; assessed value	\$106,570
Electric power lines (miles)....	29

Number of Fruit Trees and Vines.

	Bearing.	Non-bearing.	Total.
Apple	11,000	.....	11,000
Apricot	25,000	.....	25,000
Fig	1,500	1,000	2,500
Lemon	150	1,000	1,500
Olive	6,500	3,500	10,000
Orange	600	1,300	1,900
Peach	70,000	15,000	85,000
Quince	25	.....	25
Other kinds ..	10	.....	10
Total fruit..	114,785	21,800	136,935
Almond	550	.....	550
Walnut	50	.....	50
Total nut ..	600	.....	600
Grapevines, acres	6,960	1,675	8,635
Berries, acres.	100	.....	100

Fruits, Vegetables, Etc.

	Total Production. Pounds.	Value.
Green—		
Apples	500,000	\$12,500
Olives	130,000	3,000
Totals	630,000	\$15,500
Dried—		
Almonds	5,000	600
Apricots	240,000	19,200
Peaches	900,000	47,250
Totals	3,645,000	\$142,050

Cereal Products and Hay.

	Tons of 2,000 pounds.		Value.
	Acres.	Tons.	
Wheat	100,000	11,000	\$352,000
Barley	100,000	31,000	527,000
Oats	7,000	2,000	46,000
Corn	250	330	11,880
Total cereals..	257,250	44,330	\$936,880
Alfalfa hay	10,000	45,000	\$400,000
Grain hay	4,000	6,000	72,000
Total hay	14,000	51,000	\$472,000

Wines, Brandies, Etc.

	Gallons.	Value.
Sweet wines	1,500,000	\$375,000
Brandy	10,000	20,000
Number of wineries, 2; number of distilleries, 2.		

Dairy Industry.

	Production.	Value.
Butter (pounds)	1,000,000	\$250,000
Creameries, 1.		

STATISTICS OF MADERA COUNTY, 1909-10—Continued.

Live Stock Industry.			Forest Products.		
	Number.	Value.		Amount.	Value.
Cattle—Beef	12,000	\$360,000	Area of timber lands		
Stock	50,000	1,000,000	(acres)	75,000	.....
Dairy Cows—Graded..	2,500	100,000	Cedar (acres)	4,000	.....
Thoroughbred—			Pine (acres)	71,000	\$1,875,000
Holsteins	900	45,000	Sawmills (number)....	3	1,200,000
Calves	10,000	60,000	Lumber (feet)	15,000,000	1,140,000
Swine	10,000	40,000	Sash and door fac-		
Horses—Thoroughbred	100	20,000	tories (number)	1	100,000
Common	4,900	392,000	Total value		\$4,315,000
Colts	1,300	32,500	Power used for mills and manufactories		
Mules	3,100	310,000	in county—Steam (number), 4; electrical		
Sheep	10,000	30,000	(number), 1; water (number), 1.		
Lambs	4,000	4,000			
Total stock	108,800	\$2,393,500	Miscellaneous Products.		
Wool (pounds)	100,000	10,000		Pounds.	Value.
			Bees (hives), number.	915	\$2,755
			Honey	50,000	5,000
Poultry and Eggs.			Manufactories.		
	Dozen.	Value.		No.	Number of
Chickens	9,000	\$27,000			Value of
Ducks	100	600	Wood boxes	80	Products.
Turkeys	900	18,000	Granite	300	500,000
Total value		\$45,600	Saw and planing mills...	900	2,000,000
			Sash and door factories.	125	300,000

MERCED COUNTY.

Merced County possesses as good land as is to be found anywhere in the San Joaquin Valley for fruit and alfalfa, but its development has been retarded by large land holdings, and grain growing has been the principal occupation. Within recent years, however, thousands of acres have been subdivided into colony lots and placed on the market, and vigorous advertising campaigns organized. This, of course, means immigration, development, and prosperity.

The good roads movement is receiving its due amount of consideration in the county, and the different supervisorial districts have built several miles of new roads, with the expectation of extending them as fast as possible. The county is particularly fortunate in being able to secure a high grade of road material from the near by rock crusher at Jasper, on the line of the Yosemite Valley Railroad, and at reasonable cost.

The new Yosemite Valley Railroad has its terminal facilities in the city of Merced, which include a general office building and depot, round-house, turntable, and switch yards. It is a standard gauge steam road. The line connects at Merced with the trunk lines of the Santa Fe and Southern Pacific, and extends to El Portal at the Yosemite National Park line, a distance of 78 miles. It is a picturesque route, following the course of the Merced River Canyon.

The road was built to handle the immense tourist travel to and from the celebrated Yosemite Valley, and Merced has become known as the gateway to Yosemite, on account of the thousands of tourists who pass through annually. Leaving the little city of Merced, the traveler is soon on the open plains, headed for the snow-capped Sierras that arise abruptly to the eastward. We get our first view of the beautiful Merced River and cross it just before reaching Hopeton. Another stretch of tangent track and a curve or two, and we round the outskirts of the old town of Snelling. This is the rich farming district of the Merced, as is shown by the herds of cattle and hogs, the orchards, the fields of alfalfa and Indian corn. The next stop is Merced Falls. Here we see a broad, smooth expanse of the river, and hear the roar as the water rolls over the falls.

On leaving this point we enter the Merced Canyon, and the ascent through the narrow gorge has commenced. We begin at once to notice the signs of the mining days of old, for the Merced was famous in that respect, and, for that matter, still has gold and other minerals along its course which are being actively mined. The Exchequer power plant and dam is the next mark of modern improvement, and just beyond a short distance is Pleasant Valley, so named from its surroundings. A bend in the river is passed, and we again cross the river. Of the many interesting sights in the canyon, the several waterfalls or dams are sure to attract attention. Bagby may be called the halfway station, and this pretty little mountain retreat, with its broad sheet of water pouring over the dam, the stamp mill and the power plant, has some history that takes us back to the early days when General Fremont erected here a stamp mill and christened it Benton Mill in honor of Senator Benton of

Missouri. A wagon bridge also spans the river here on the old road that connects Coulterville and Mariposa.

We now begin to realize more fully that we are penetrating deeper and deeper into the mountains, for the canyon walls shut us in completely and tower skyward, and we see nothing but huge mountain walls ahead and behind us. The track curves about each projecting abutment with the exact precision of the river. The water rushes over great boulders and forms into many rapids and cataracts. Along here we see the mouth of the North and South Fork tributaries empty their rushing torrents from the distant snow-capped mountains and lakes and wonder at the awful chasms whence they issue.

We round another curve, completing almost a full circle of what is known as the "Hogback," when plainly up the canyon ahead of us, on the face of the mountain wall, we see the filmy sheet of water called the Chinquapin Fall, and opposite which and far below on the river's edge is El Portal, the end of the first part of the journey, and the commencement of the exciting and romantic stage ride of fourteen miles through the Yosemite Park. Away up in the mountains, an altitude of nearly two thousand feet, we find this picturesque, secluded resort, a fine large hotel with wide verandas, shut in on all sides by the mountains, with the wild rushing river before us. Here we may stop for rest and enjoyment, and proceed to Yosemite when we are ready to do so.

The stage ride through the Yosemite Park from El Portal is one of the principal features of the entire trip, for its beauty and grandeur are unsurpassed by any other road of equal length in America. The road continues along the ever-present river to the Portal of Yosemite, and the traveler is in a measure prepared for the sublimities of California's Wonderland, which burst on the view as the stages halt on the bank of the river for the first general view of the valley, where El Capitan rises abruptly three thousand three hundred feet high, the mighty guardian of the valley, with beautiful Bridal Veil Fall to the right with its nine hundred and forty feet of mist and rainbow effect. Ere we reach our hotel or camp, we have received our first general impression of the great valley. Its beauty and grandeur grow upon you. It is indescribable; it must be seen to be appreciated.

The creamery industry has developed so rapidly that Merced County is now near the head of the list in the production of cream.

Merced County excels in the quantity and quality of its sweet potatoes. The fig industry is yet in its infancy, but it has been proven that the soil and climatic conditions are very favorable, for the Government expert has pronounced this soil best for figs and olives. Also the peaches and grapes of Merced County have a State reputation.

The flour mills are producing an extra good quality of flour, so are rapidly increasing their outputs.

Merced County is located about the center of the State and also about the center of the San Joaquin Valley. Numerous rivers and creeks traverse the county, furnishing a natural water supply, while the county's system of artificial irrigation is one of the finest in the world. It has two systems, one on the east side and the other on the west side of the San Joaquin River. The main canal on the east side is 65 feet wide at the bottom and 100 feet wide on top and 10 feet deep, the carrying capacity being 4,000 cubic feet per second. The length of the canal

is about 50 miles, with something over 250 miles of subsidiary canals built as a part of the system, and these are constantly being added to as the demands require.

The canal on the west side is 40 miles in length with over 100 miles of lateral ditches, literally making an otherwise dry section "blossom as a rose." Lake Yosemite, the reservoir into which the canal empties, covers about a square mile, with the average depth of 36 feet.

STATISTICS OF MERCED COUNTY, 1909-10.

General Statistics.		
Area 2,000 square miles, or 1,280,000 acres.		
Number of farms	3,250	
Number of acres assessed.....	1,164,958	
Value of country real estate.....	\$11,466,520	
Of improvements thereon	\$1,159,880	
Of city and town lots	\$647,595	
Of improvements thereon	\$997,020	
Of personal property	\$3,046,184	
Total value of all property	\$17,444,130	
Expended on roads and bridges, last fiscal year	\$79,019	
Number of miles of public roads	1,090	
Road levy per \$100, 1910.....	55c	
Value of county buildings.....	\$221,250	
Irrigating ditches—miles, 227; cost	\$342,520	
Railroads, steam—miles, 154.12; assessed value	\$3,396,825	
Electric power plants—1; assessed value	\$40,430	
Electric power lines—miles, 18½; assessed value	\$3,700	
Number of acres irrigated.....	160,500	

Cereal Products and Hay.		
Tons of 2,000 pounds.		
	Acres.	Bushels.
Wheat	10,500	149,000
Barley	55,425	1,390,000
Oats	15,340	244,960
Rye	6,100	23,833
Corn	3,525	44,643
Egyptian wheat	2,000	25,000
Total cereals.....	122,890	1,875,786
	Acres.	Tons.
Alfalfa hay	23,100	45,025
Grain hay	19,100	12,500
Total hay	42,200	57,525

Number of Fruit Trees and Vines.		
	Bearing.	Non-bearing.
Apple	5,750	2,450
Apricot	8,250	9,125
Cherry	520	2,250
Fig	10,935	9,750
Lemon	750	350
Nectarine	610	50
Olive	4,100	3,300
Orange	2,825	5,200
Peach	148,441	380,150
Pear	4,250	9,210
Plum	200	108
Prune	9,200	2,150
Quince	500	750
Other kinds ..	50	100

Total fruit..		
Almond	21,750	11,600
Chestnut	20	25
Pecan	50	50
Walnut	950	900
Total nut	22,780	12,475
Grapevines	2,781,900	1,652,300
Berries (acres)—		
Black	40	30
Mammoth ..	20	5
Dew	7	2
Logan	35	10
Strawberries ..	20	5
Raspberries ..	3	1

Fruits, Vegetables, Etc.		
	Total Production. Pounds.	Value.
Green—		
Apples	53,225	\$793
Apricots	98,250	1,473
Asparagus	5,100	255
Blackberries	165,350	3,267
Beans	365,250	18,267
Beets	67,000	670
Cabbage	110,150	1,101
Celery	13,250	265
Cauliflower	84,255	1,684
Corn	302,000	6,040
Cantaloupes	25,750	1,802
Figs	78,340	783
Grapes	7,967,000	63,818
Grape fruit	1,400	52
Lemons (boxes)	1,510	3,020
Loganberries	172,350	6,894
Nectarines	5,140	51
Onions	28,350	566
Oranges (boxes)	2,000	3,000
Olives	105,250	2,105
Pears	101,250	1,012
Peaches	1,108,900	11,089
Peas	41,260	824
Persimmons	2,000	80
Plums	107,250	1,072
Irish potatoes	630,100	6,301
Sweet potatoes	12,360,000	197,760
Pumpkins	4,530,000	6,745
Quinces	38,250	424
Raspberries	6,130	405
Strawberries	33,240	1,965
Tomatoes	115,700	578
Tomatoes (boxes)	70,000	24,500
Watermelons	1,650,000	5,200
Chili peppers	1,500	75
Totals	31,906,520	\$378,931

Dried—		
	Pounds.	Value.
Almonds	83,450	\$11,200
Apples	1,000	70
Apricots	150,600	10,542
Beans	210,300	14,721
Figs	504,200	20,168
Onions	120,100	1,800
Pears	2,350	164
Peaches	1,200,000	60,000
Peanuts	4,625	370
Plums and prunes.....	106,250	3,186
Raisins	113,800	455
Walnuts	3,500	437
Pecans	650	71
Totals	2,500,825	\$123,184

Dairy Industry.		
	No. Production.	Value.
Skimming stations ..	6	\$2,200,416
Butter (pounds) ..	283,308	94,436
Cheese (pounds) ..	229,875	36,780
Creameries, 2.		

Wines, Brandies, Etc.		
	Gallons.	Value.
Dry wines (claret)....	61,400	\$9,210
Sweet wines (port) ..	91,000	22,750
Brandy	23,000	23,000
Vinegar	2,000	400
Number of wineries, 1; number of distilleries, 1.		

STATISTICS OF MERCED COUNTY, 1909-10—Continued.

Live Stock Industry.			Poultry and Eggs.		
	Number.	Value.		Dosen.	Value.
Cattle—Beef	5,275	\$237,375	Chickens	6,150	\$43,050
Stock	44,000	497,108	Ducks	250	1,500
Dairy Cows—Graded..	23,250	1,162,500	Geese	53	638
Thoroughbred	220	16,500	Turkeys	1,935	58,050
Calves	7,862	55,034	Turkey eggs	1,400	2,800
Swine	38,240	382,350	Eggs	307,500	76,875
Horses—Thoroughbred	41	12,300			
Standard-bred	4,375	218,750	Total value		\$182,911
Common	1,820	55,546			
Colts	1,346	28,725			
Jacks and jennies	120	12,000			
Mules	2,840	351,000			
Sheep	69,050	207,150			
Lambs	30,100	60,200			
Angora goats	700	1,750			
Common goats	6,468	12,936			
Total stock	235,207	\$3,311,222			
Wool (pounds)	552,400	44,192			
Forest Products.			Manufactories.		
	Amount.	Value.		No. Employees.	Value of Products.
Fuel, wood (cords) ...	1,000	\$5,000	Brick	2	\$10,000
Power used for mills and manufactories			Flouring mills	2	128,000
in county—Steam (number), 1; electrical			Meat products—		
(number), 1; water (number), 1.			Hides		63,750
Miscellaneous Products.			Lard		17,750
	Pounds.	Value.	Tallow		4,637
Bees (hives), number.	2,560	\$5,120	Olive oil		625
Beeswax	2,250	607	Pickles		1,250
Broomcorn	8,000	260	Cereals		16,000
Honey	131,650	13,165	Dredger		30,000
			Manufactured Output.		
				Quantity.	
			Brick (thousand)	1,250	
			Flour (barrels)	21,350	
			Hides (pounds)	637,500	
			Lard (pounds)	105,000	
			Tallow (barrels)	375	
			Olive oil (gallons)	250	
			Pickles (gallons)	1,600	
			Cereals (pounds)	533,350	

MODOC COUNTY.

Modoc County lies in the extreme northeastern corner of California. The county is a succession of mountain ranges and valleys branching off from the Sierra Nevada Mountains, the principal spur of which is the Warner Range. It is principally drained by Pitt River, which flows into the Sacramento, near Redding, Shasta County. The lava-bed section occupies over one half the total area. The county has two large lakes, but barring the lakes and the large cattle ranges it is sparsely settled.

The valleys are the principal features, the leading ones being Surprise, Goose Lake, Hot Springs, Jess, Big, and Little Hot Springs.

Wheat, barley, fruit, vegetables, and hay are the leading staples. Thousands of acres are in alfalfa, and the stock and dairying industries are thriving. Every ranch has a fine orchard, and ranch houses and barns, costing \$5,000 or \$6,000 in total improvements, are not uncommon. Trees, both shade and ornamental, abound around every place.

The climate is that of the temperate zone, and the products are those of the great intermountain region which stretches from the Sierra to the western plains of Kansas. Snow falls in the valleys and much deeper in the mountains, forming the principal supply of moisture for the development of the country. Stock is usually fed for several months through the winter, although it is not always necessary to do so. The thermometer will sometimes run below zero for a few days in the winter, but not for very long, and 90 degrees is extreme heat for summer. Even in summer the evenings are cool and delightful.

The county is well watered. Surprise Valley has nearly twenty streams, which run both winter and summer. Goose Lake Valley is equally fortunate, while Pitt River supplies water for many farms and ranches. Many springs exist, especially in the mountains; and in Surprise Valley there are many artesian wells.

The timber of the county is pine and fir in the Warner Range, and sugar pine in the western part.

Horticulture has had but a small place in the industries, only sufficient fruit for home uses being raised. However, the gradual approach of the railroad running north from Reno, Nevada, will increase the productivity in this line immensely, as the county is well adapted to apples, pears, and berries. The wild plum is about the only native fruit. The cultivated fruits were brought in the earlier days from Eastern States by the immigrants who came across the plains. A great deal of orchard planting has been done within the last few years.

The last five years has seen a great deal of reservoir work undertaken throughout the county and its tributary valleys. The rains come in time to insure abundant harvests year after year.

The nearest railroad point to Alturas, the county seat, is Madeline, in Lassen County. Daily trains are run from Madeline to Reno, Nevada.

There are flouring mills located at Bidwell, Lake City, Cedarville, New Pine Creek, Alturas, and Adin. There are sawmills located at Bidwell, Cedarville, Eagleville, Willow Ranch, Davis Creek, Jess Valley, Alturas, Adin, and Willow Valley.

STATISTICS OF MODOC COUNTY, 1909-10.

General Statistics.

Area 4,100 square miles, or 2,624,000 acres.	
Number of farms	784
Number of acres assessed	646,716
Value of country real estate	\$3,738,900
Of improvements thereon	\$476,895
Of city and town lots	\$112,135
Of improvements thereon	\$299,885
Of personal property	\$1,270,657
Total value of all property	\$6,049,252
Expended on roads, last fiscal year	\$18,000
Expended for bridges, last fiscal year	\$2,000
Number of miles of public roads	546
Road levy per \$100, 1910	36c
Value of county buildings	\$10,000
Irrigating ditches (miles)	400
Railroads, steam (miles, 28½; assessed value	\$149,791
Electric power plants—1; assessed value	\$2,500
Electric power lines—miles, 6½; assessed value	\$750
Number of acres irrigated	58,628

Cereal Products and Hay.

Tons of 2,000 pounds.			
	Acres.	Bushels.	Value.
Wheat	4,804	107,801	\$109,957
Barley	4,356	138,008	111,726
Oats	2,293	52,844	36,990
Rye	260	2,739	3,287
Corn	100	2,000	1,000
	Acres.	Tons.	Value.
Alfalfa hay	5,719	18,401	\$113,948
Grain hay	772	1,727	13,806
Grass hay	30,675	64,898	401,552
Total hay	37,166	84,726	\$529,306

Live Stock Industry.

	Number.	Value.
Cattle—Beef	11,723	\$446,239
Stock	41,822	836,440
Dairy Cows—Graded..	1,126	56,300
Thoroughbred—		
Herefords	200	8,000
Holsteins	20	800
Jersey	40	2,000
Shorthorns	258	14,455
Calves	9,375	112,500
Swine	6,358	55,749
Horses—Thoroughbred	57	6,600
Standard-bred	80	14,300
Common	9,207	554,377
Colts	2,008	60,240
Jacks and jennies...	94	35,705
Mules	899	67,595
Sheep	38,016	163,072
Lambs	28,083	84,249
Angora goats	1,883	7,532
Common goats	1,200	3,600
Full-blood horses and graded	46	70,000
	Pounds.	Value.
Wool	248,864	\$36,297
Mohair	6,691	2,307
Common goat wool...	1,800	540

Wines, Brandies, Etc.

	Gallons.	Value.
Beer (gallons)	27,000	\$1,000
Cider	5,650	2,825
Vinegar	2,515	1,258

Dairy Industry.

	No. Production.	Value.
Creameries	1	\$2,000
Butter (pounds)	108,096	27,024
Cheese (pounds)	15,720	1,730

Number of Fruit Trees and Vines.

	Bearing.	Non-bearing.	Total.
Apple	24,756	2,024	26,780
Apricot	151	150	801
Cherry	686	430	1,116
Nectarine	50	10	60
Peach	1,330	632	1,962
Pear	1,062	506	1,568
Plum	1,670	770	2,440
Prune	312	75	387
Quince	8	.....	8
Total fruit..	30,525	4,587	34,735
Walnut	175	10	185
Grapevines	100	.....	100
Berries, acres.	27	.....	27

Fruits, Vegetables, Etc.

	Total Production. Pounds.	Value.
Green—		
Apples	2,072,821	\$2,188
Apricots	49,650	35
Blackberries	2,235	3,086
Beets	123,525	3,308
Cabbage	138,700	53
Cauliflower	7,000	20
Corn	30,000	
Currants	790	
Cherries	61,015	
Gooseberries	1,655	
Grapes	300	
Loganberries	2,665	
Nectarines	6,000	
Onions	4,000	
Pears	121,550	
Peaches	130,370	
Plums	129,154	
Irish potatoes	1,228,800	
Sweet potatoes	100	
Prunes	38,330	
Quinces	600	
Raspberries	34,435	
Strawberries	12,000	
Tomatoes	186,200	
Dried—		
Apples	31,250	
Apricots	500	
Beans	61,715	
Onions	110,270	
Pears	750	
Peas	2,000	

Poultry and Eggs.

	Dozen.	Value.
Chickens	3,178	\$12,712
Ducks	15	90
Geese	12	150
Turkeys	166	2,973
Eggs	1,906,800	476,700
Total value		\$492,625

Forest Products.

	Amount.	Value.
Sawmills (number) ...	10	\$75,000
Laths	300,000	975
Lumber (feet)	4,861,000	97,220
Shingles	735,000	2,572

Power used for mills and manufactories in county—Steam (number), 11; water (number), 4.

Miscellaneous Products.

	Pounds.	Value.
Bees (hives), number.	1,000	\$4,000
Beeswax	250	.....
Honey	30,000	3,000
Alfalfa seed	436,888	65,533
Grass seed	6,000	600
Sugar beets (tons)....	815,000	16,000

MONO COUNTY.

Mono is a long, narrow county lying on the eastern slope of the Sierra, its greatest length bordering on the State of Nevada, which forms its northeastern boundary, its general direction being southeast and northwest.

The general contour is mountainous and very rough, all but 400 square miles, or less, being mountainous. The western portion lies among the Sierra Nevada Mountains, along their summit, the heights being clad in snow, and the slopes of the range being covered with forest trees.

Among the highest peaks are Mount Dana, 13,627 feet; Mount Lyell, 13,217 feet; and Castle Peak, 13,000 feet. The greater portion of the population is in the eastern part, in the valleys and the mining camps in the surrounding mountains. This portion, which has always been considered a strange, mysterious country, is of a desert-like, volcanic character abounding in salt pools, alkali, and volcanic table-lands, its character being significantly indicated by some of the local names such as Hot Springs, Geysers, Sulphur Springs, Black Lake, Soda Pond, Volcano, Obsidian Mountain, Deep Canyon, Volcanic Tableland, Red Crater, Obode Meadows, and Oasis.

Mono Lake, the "Dead Sea of America," is one of the attractions, and situated in the center of the county; it is about 12 miles long and 8 miles wide; its waters are a somewhat unusual compound, various chemical substances being found in solution in them. Several attempts have been made to utilize this water without success. This lake has all the appearances of having once been the scene of volcanic action. The country surrounding it, as Bodie, Aurora, Lundy, Tioga, and Benton, abounds in minerals. The lake has a number of small streams flowing into it, but is without a perceptible outlet.

Owens River in the south, which takes its rise in a high peak in the Sierra, and Kitten and Walker rivers in the north, are the principal streams. One passes through the southern part into Inyo County. The other, after rising in Mono County, continues its course into the State of Nevada. These two streams with their branches, together with the small streams that flow into Mono Lake, furnish the principal water supply for irrigation.

The retaining of the snow in the high mountains, at the sources of the streams used for irrigation, until later in the season, assures an abundance of pasturage on the mountain ranges, which are thronged with vast herds of cattle and bands of horses and sheep that are brought from the lower sections to graze during the summer.

That portion of the valley soil lying contiguous to the streams is very rich. A great deal of the sagebrush land, formerly considered barren, is found to be very productive when placed under cultivation. Thus the area of tillable land has been vastly increased within the last few years, and wherever water can be got on the land, even well up on the foothills, there are farms that are making comfortable homes for their owners.

MONTEREY COUNTY.

Monterey County is situated about 100 miles south of San Francisco, and 300 miles north of Los Angeles, on the Pacific coast. It is 124 miles long and 45 miles wide, its extreme length being from north to south.

Owing to the peculiar topography, with its rough mountains and broad plains, its great rivers running from south to north, with tributaries from either side, its rolling hills, and rugged mountains, it is found to be a miniature of the State, with its diversity of climate and soil, enabling it to yield everything produced in the State, and rendering it one of the most desirable regions for settlement.

Its rivers furnish a never failing supply of water for irrigation, and the mountains abound in minerals—gold, silver, copper, coal, bitumen, and oil.

The county is divided into three sections—the mountains and hills on the east, mountains and hills on the west, and the great Salinas Valley situated between these ranges of mountains.

The portion of Pajaro Valley lying south of the Pajaro River, and running to Monterey Bay on the southwest, is in Monterey County, and is about 15 miles long, and from 6 to 8 miles wide. The land is exceedingly fertile and under a thorough system of cultivation, producing immense crops of all kinds of vegetables, grain, fruit, and berries. Well tilled farms greet the eye, and villages, schoolhouses, churches, and picturesque residences dot the landscape in every direction. The foothills are covered with flocks and herds, and the lower ranges are timbered with live oak. The Pajaro River flows southwesterly and finds an outlet in Monterey Bay, near the mouth of the Salinas River.

The great Salinas Valley opens out on Monterey Bay and extends southward 100 miles, with an average width of 10 miles; therefore its area is about 1,000 square miles, or 640,000 acres. The Salinas River flows through its entire length. The land may be divided into three classes, viz.: First, the heavy, rich bottom lands, which produce almost everything, the soil being sediment and black adobe, which often contains just enough sand to make it work easily. Second, the mesa or table-lands, particularly adapted to growing wheat, barley, and other cereals. Third, the uplands and slightly rolling hills, some of which are the finest fruit lands in California, and will produce oranges, lemons, grapes, peaches, apricots, almonds, walnuts, figs, apples, plums, pears, berries, and all other fruits common to the State.

Nearly all semi-tropical fruits do well in some part of the this county, especially in the thermal belt along each side of Salinas Valley. A number of orange and lemon trees in yards of Salinas City hang full of fruit each year and are never injured by frost.

In barley, beets, and carrots, this valley can not be surpassed.

Going south, wheat excels; and grapes, peaches, prunes, apricots, cherries, and almonds grow to perfection in the foothills, canyons, and small valleys, and figs do well in sheltered places.

Olive trees flourish with all the vigor they possess in their native

country. Currants, gooseberries, blackberries, loganberries, and raspberries grow luxuriantly. Strawberries are in the market all the year round, and are shipped from Pajaro by car loads. Grapes grow to perfection everywhere in the county, except in the heavy bottom lands of the lower Salinas Valley.

As to potato raising, the Salinas Valley has no equal; here is the home of the famous Salinas Burbanks that are in such great demand all through the Northwest, and thousands of sacks are shipped to the Philippine Islands. As high as four hundred bushels to the acre have been raised near Salinas.

Dairying is a very prominent, if not a leading industry. Some of the finest dairies in the State are in Monterey County, and some of the best cheese and butter in the State are made here. They have the latest and best improved machinery, and have found their business very profitable.

Extensive work has been done in the last few years in bringing the valley under a thorough system of irrigation. Opposite Soledad, on the south side of Salinas River, considerable irrigation is done around Fort Romie on lands purchased by the Salvation Army, and sold on most favorable terms to worthy poor in need of homes. This is one of the most prosperous colonies in America. Around the Spreckels sugar factory, four miles from Salinas City, a great deal of land has been irrigated for raising beets. This is the largest beet-sugar factory in the world.

The main transcontinental line of the Southern Pacific Railroad enters this county through Pajaro Valley on the north, and runs southeast through its entire length, paralleling the Pajaro and Salinas rivers.

Pajaro is the great shipping point for apples, berries, all fruits, and dairy products of its section.

Hotel Del Monte, "the queen of American watering places," including the main structure and two annexes, together with the connecting wings, is simply immense, and everything connected with the establishment is on the same magnificent scale. The grandeur of the hotel is repeated in the grounds, which cover 140 acres, laid out in lawns, flower beds, parks, and groves, and the landscape gardening is a marvel of beauty.

A little farther on is Monterey, situated on the beach of Monterey Bay, lying back on her sloping hills and overlooking the placid waters of the bay—one of the grandest and most beautiful townsites nature ever formed.

Two miles farther on is Pacific Grove. Nestled among the pines is this little town, with beautiful streets, magnificent cottages, fine churches and schoolhouses, charming drives, and with never a saloon in its sacred limits.

The harbor of Monterey Bay is second in importance on the coast. The largest battleships of our navy find anchorage within 100 feet of the shore, and during heavy storms at sea it is not unusual to see many ships of different nations anchored in the calm waters of the bay. The fishing is incomparable for quantity and variety, and two canneries are located at Monterey. There is an abalone canning factory located at Point Lobos, and one at Point Sur. Monterey Bay contains about one hundred and fifty species of food fish, and many are annually taken for market.

Salinas City, the county seat, is in the heart of the best portion of Salinas Valley, the head of the first division of the railroad, near the Spreckels sugar factory, and contains extensive gas and water works, a large flouring mill, a large creamery, a planing mill, and shops, banks, churches, and schoolhouses. There are many magnificent residences and well-improved streets. Fraternal societies are well represented.

Soledad, named for Soledad Mission, is in another wheat belt, and is an important shipping point for grain and dairy products. It is the nearest point to Paraiso Springs, whose waters contain medicinal properties of a high order.

The narrow gauge railroad from Pajaro to Salinas parallels the main line on the west, taps Monterey Bay at Moss Landing—where there are extensive warehouses and lumber yards, and where the coast vessels stop regularly for grain and merchandise—then continues to Spreckels' sugar factory, and is used principally for hauling beets to the factory and lime rock from the quarries, though considerable grain is shipped by it from the region west of Salinas.

STATISTICS OF MONTEREY COUNTY, 1909-10.

General Statistics.				Fruits, Vegetables, Etc.		
Area 3,600 square miles, or 2,304,000 acres.				Total Production.		
Number of farms	5,200			Pounds.		Value.
Number of acres assessed	1,590,312			Apples	38,400,000	\$384,000
Value of country real estate	\$13,503,900			Apricots	12,500	250
Of improvements thereon	\$2,038,030			Apparagus	6,000	480
Of city and town lots	\$3,022,020			Blackberries	50,000	2,000
Of improvements thereon	\$2,802,870			Beans	10,000	500
Of personal property	\$3,377,014			Beets	400,000,000	950,000
Total value of all property	\$24,743,834			Cabbage	20,000	400
Expended on roads, last fiscal year	\$104,797			Celery	10,000	300
Expended for bridges, last fiscal year	\$30,640			Cauliflower	10,000	300
Number of miles of public roads	1,550			Corn	500,000	5,000
Road levy per \$100, 1910	45c			Currants	1,000	30
Value of county buildings	\$115,000			Cherries	50,000	2,500
Irrigating ditches (cost)	\$250,000			Gooseberries	2,000	100
Railroads, steam—miles, 192; assessed value	\$3,425,456			Grapes	400,000	12,000
Railroads, electric—miles, 6; assessed value	\$10,000			Loganberries	200,000	8,000
Electric power plants—4; assessed value	\$73,000			Onions	20,000	500
Electric power lines—miles, 35; assessed value	\$5,000			Pears	450,000	4,500
Number of acres irrigated	24,400			Peaches	500,000	7,500
Number of Fruit Trees and Vines.				Plums	100,000	1,000
	Bearing.	Non-bearing.	Total.	Irish potatoes	16,000,000	1,440,000
Apple	220,650	38,800	257,450	Raspberries	50,000	2,000
Apricot	16,350	7,900	24,250	Strawberries	1,000,000	50,000
Cherry	450	1,500	1,950	Tomatoes	300,000	1,500
Fig .....	.....	300	300	Totals	458,091,500	\$2,872,860
Lemon	50	50	100	Dried—		
Nectarine	200	.....	200	Almonds	20,000	\$2,000
Olive	500	.....	500	Apples	360,000	21,600
Orange	500	100	600	Apricots	220,000	17,600
Peach	4,750	1,000	5,750	Beans	480,000	19,200
Pear	6,250	3,500	9,750	Onions	500,000	10,000
Plum	2,000	1,000	3,000	Peaches	2,000	160
Prune	1,850	.....	1,850	Plums	2,000	100
Quince	1,200	.....	1,200	Prunes	8,000	400
Total fruit..	255,050	51,850	306,900	Walnuts	2,000	220
Almond	3,000	.....	3,000	Totals	1,594,000	\$71,286
Chestnut	50	.....	50	Canned—		
Pecan	10	.....	10	Apples	600	\$1,400
Walnut	500	.....	500	Apricots	350	1,550
Total nut ..	3,560	.....	3,560	Pears	300	600
Grapevines .....	.....	.....	54,000	Peaches	800	1,600
Berries, acres .....	.....	.....	190	Totals	2,050	\$5,150
				Wines, Brandies, Etc.		
				Gallons.		Value.
				Beer (barrels)	10,000	\$65,000
				Number of breweries, 2.		

STATISTICS OF MONTEREY COUNTY, 1909-10—Continued.

Cereal Products and Hay.			
	Tons of 2,000 pounds.		
	Acres.	Bushels.	Value.
Wheat	24,640	266,666	\$239,999
Barley	127,000	2,320,416	1,002,419
Oats	2,000	700	20,300

Total cereals. 153,640 2,587,782 \$1,262,718

	Acres.	Tons.	Value.
Alfalfa hay	2,000	8,000	\$72,000
Grain hay	8,000	12,000	120,000

Total hay 10,000 20,000 \$192,000

Fish Industry.			
	Pounds.		
Salmon	592,085		
Other kinds	1,275,000		

Total 1,867,085

Dairy Industry.			
	Production.	Value.	
Butter (pounds)	760,000	\$228,000	
Cheese (pounds)	3,000,000	465,000	
Condensed milk (cases)	162,000	486,000	

Total \$1,179,000

Creameries, 45; condenseries, 1.

Live Stock Industry.			
	Number.	Value.	
Cattle—Beef	9,400	\$692,000	
Stock	32,400	648,000	
Dairy Cows—Graded..	10,000	315,000	
Calves	12,000	96,000	
Swine	12,000	120,000	
Horses—Thoroughbred	200	60,000	
Standard-bred	3,600	360,000	
Common	11,200	560,000	
Colts	3,500	105,000	
Jacks and jennies....	30	16,500	
Mules	600	66,000	
Sheep	30,000	90,000	
Lambs	10,000	20,000	
Angora goats	1,800	7,200	
Common goats	650	1,625	

Total stock \$3,157,325

	Pounds.	Value.
Wool	132,000	\$3,700
Mohair	18,500	

Poultry and Eggs.			
	Dozen.	Value.	
Chickens	18,000	\$72,000	
Ducks	250	1,125	
Geese	150	1,200	
Turkeys	400	4,800	
Eggs	720,000	144,000	

Total value \$223,125

Forest Products.			
	Amount.	Value.	
Fuel, wood (cords) ...	33,000	\$209,000	
Lumber (feet)	600,000	6,000	
Pickets (pieces)	20,000	1,000	
Posts (pieces)	6,000	660	
Shakes (thousand) ...	50	250	
Shingles (thousand) ..	500	1,500	

Total value \$218,410

Power used for mills and manufactories in county—Steam (number), 40; electrical (number), 12.

Miscellaneous Products.			
	Pounds.	Value.	
Bees (hives), number.	8,000	\$31,500	
Beeswax	5,000	1,500	
Honey	367,500	28,537	

Manufactories.			
	No.	Number of Employees.	Value of Products.
Brick	1	20	\$25,000
Cigars	10	60	
Confectionery	12	45	
Flouring mills	1	19	441,528
Lime	1	75	100,000
Planing mills	6	50	
Artificial stone	3	10	
Sugar, beet	1	700	1,875,000
Sardine canneries ...	2	297	157,500

Manufactured Output.			
	Quantity.		
Brick	2,000,000		
Cigars	235,000		
Flour (barrels)	54,091		
Lime (barrels)	80,000		
Hides (pounds)	369,000		
Tallow (barrels)	500		

NAPA COUNTY.

Napa County has shown a decided gain in population and wealth in the year 1909-1910. The total assessed valuation of property increased from \$14,752,470 in 1909 to \$15,095,295 in 1910. The principal resources of the county are the raising of grapes, the making of wine and of grape juice; raising of prunes, peaches, pears, plums, and other fruit, and growing of grain; quicksilver mining; the manufacture of cement at Napa Junction; the operation of tanneries, glove, shoe, cartridge, shirt, leather goods, and other manufacturing establishments.

Napa County has the great advantage of river transportation to the bay of San Francisco, passenger and freight steamers making daily trips between Napa and San Francisco. The board of supervisors have greatly improved the roads of the county in 1910, and Napa County leads the State in the number of stone bridges. The climate is mild, the thermometer rarely reaching 98° in the summer, and there are a number of extensive summer resorts, which are liberally patronized each year.

One great advantage of farming in Napa County is that no irrigation is required to produce any crops. The center of the Napa Valley is traversed by an electric railroad, as well as a steam road.

Napa County has almost 800 square miles of territory, and its southern boundary reaches down to within twenty-nine miles of San Francisco. The Napa River, a short tidal stream, which drains the great Napa Valley, is navigable to the heart of the city of Napa.

There are many large creeks, brooks, and many springs in the hills, both mineral and otherwise, all of which would furnish limitless water for irrigation, if Napa County needed it.

In addition to the water facilities, two steam roads and one electric line enter the city of Napa, thus making it one of the most desirable manufacturing towns in the State of California.

STATISTICS OF NAPA COUNTY, 1909-10.

General Statistics.		Cereal Products and Hay.			
Area 800 square miles, or 512,000 acres.		Tons of 2,000 pounds.			
Number of farms	7,500	Wheat	Acres.	Bushels.	Value.
Number of acres assessed	410,000	Barley	45,001	135,000	\$118,250
Value of country real estate.....	\$5,295,585	Oats	3,000	105,000	42,000
Of improvements thereon	\$2,686,785	Corn	5,500	275,000	110,000
Of city and town lots	\$1,856,025		2,500	80,000	72,000
Of improvements thereon	\$2,666,735	Total cereals..	15,500	595,000	\$342,250
Of personal property	\$15,095,295	Alfalfa hay	Acres.	Tons.	Value.
Total value of all property.....	\$27,600,425	Grain hay	1,000	4,000	\$40,000
Expended on roads, last fiscal year	\$43,900	Grass hay	5,000	10,000	80,000
Expended for bridges, last fiscal year	\$25,000		2,000	2,000	12,000
Number of miles of public roads	150	Total hay	8,000	16,000	\$132,000
Road levy per \$100, 1910.....	36c	Wines, Brandies, Etc.			
Value of county buildings	\$130,000	Gallons.			
Railroads, steam — miles, 56.07; assessed value	\$1,385,833	Dry wines	4,000,000	Value.	
Railroads, electric—assessed value	\$207,196	Champagne	5,000	18,000	
Electric power plants—assessed value	\$100,000	Beer (barrels)	460,000	115,000	
Electric power lines—assessed value	\$70,000	Brandy	9,750	39,000	
Number of acres irrigated—Alfalfa	50	Cider	500	.....
		Vinegar	5,000	750	
		Grape juice	20,000	7,000	
		Number of wineries, 39; number of distilleries, 4; number of breweries, 3.			

STATISTICS OF NAPA COUNTY, 1909-10—Continued.

	Number of Fruit Trees and Vines.		
	Bearing.	Non-bearing.	Total.
Apple	45,000	10,190	55,190
Apricot	17,000	2,370	20,370
Cherry	32,000	2,900	34,700
Fig	1,500	690	2,190
Lemon	1,030	480	1,510
Nectarine	390	110	500
Olive	43,460	690	44,150
Orange	2,100	2,130	4,230
Peach	107,880	6,400	114,280
Pear	69,120	920	70,040
Plum	120,320	35,090	155,410
Prune	91,180	8,465	99,645
Quince	970	730	1,700

Total fruit..	531,950	71,165	603,115
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Almond	47,450	3,160	50,610
Walnut	9,400	2,240	11,640

Total nut ...	56,850	5,400	62,250
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Grapevines ...	11,270	4,840	16,110
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Hops (acres)			100
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Potatoes (acres)			450
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Fruits, Vegetables, Etc.

	Total Production.	Value.
	Pounds.	
Green—		
Apples	1,950,000	\$12,590
Apricots	1,000,000	9,800
Blackberries	22,000	770
Cabbage	10,000	250
Cauliflower	5,000	125
Cherries	410,200	20,500
Grapes	60,000,000	330,000
Loganberries	10,000	500
Onions	12,000	250
Pears	2,500,000	25,000
Peaches	3,100,000	31,000
Plums	640,000	6,400
Irish potatoes	410,000	8,200
Strawberries	31,000	2,300

Totals	90,100,200	\$447,685
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	Pounds.	Value.
Dried—		
Apples	20,000	\$1,000
Apricots	160,000	8,000
Pears	340,000	17,500
Peaches	510,000	20,400
Prunes	3,600,000	96,000

Totals	4,630,000	\$142,900
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	Cases.	Value.
Canned—		
Pears	18,000	\$86,400
Peaches	13,000	62,400
Plums	16,000	

Totals	47,000	\$220,800
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Dairy Industry.

	No. Production.	Value.
Creameries	7	211,500
Butter (pounds) ..		210,000
Cheese (pounds) ..		1,500

Live Stock Industry.

	Number.	Value.
Cattle—Beef	272	\$6,800
Stock	4,040	80,800
Dairy Cows—Graded..	9,255	240,000
Thoroughbred—		
Jersey	135	6,750
Calves	2,060	10,300
Swine	2,710	13,550
Horses—Thoroughbred	5	4,000
Standard-bred	170	42,500
Common	5,890	294,500
Colts	1,525	30,500
Jacks and jennies ..	10	100
Mules	340	17,000
Sheep	3,650	10,950
Lambs	500	1,000
Common goats	150	300

Total stock	30,712	\$759,050
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Wool (pounds)		3,000
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Poultry and Eggs.

	Dosen.	Value.
Chickens	2,600	\$13,000
Ducks	50	300
Geese	10	60
Turkeys	200	4,800
Eggs	15,000	4,500

Total value		\$22,660
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Forest Products.

	Amount.	Value.
Fuel, wood (cords)....	1,500	\$8,250
Power used for mills and manufactories in county—Steam (number), 24; electrical (number), 18.		

Miscellaneous Products.

Honey (pounds)		1,500
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Manufactories.

	No.	Number of Employees.	Value of Products.
Bookbinderies	1	2	\$2,000
Paper boxes	1	10	12,000
Carriages and wagons	3	15	6,000
Cement			1,400,000
Cigars			7,425
Clothing			140,000
Crackers	1	7	20,000
Foundries and iron works	3	11	15,000
Leather goods	1	8	10,400
Malt	1	2	5,000
Olive oil	2	4	
Planing mills	5	20	100,000
Granite and marble..	3	11	25,000
Tanneries	2	94	700,000
Shoes	1	200	250,000
Gloves	2	273	500,000

Manufactured Output.

	Quantity.
Cement (tons)	99,500
Cigars (thousand)	165
Crackers (pounds)	20,000

NEVADA COUNTY.

Nevada County is situated in that part of the State of California generally known as the northern portion, although its county seat, Nevada City, is but 60 miles from Sacramento. It has an area of about one thousand square miles, and is bounded on the north by Sierra County, on the east by the State line between California and Nevada, on the south by Placer County, and on the west by Yuba County. From the Yuba County line, Nevada County is hemmed in by the Yuba and Bear rivers until their sources are reached. The South Yuba River heads in the high Sierra and runs across the county almost its entire length from east to west.

The climate is more varied than almost any other part of the State. On the rolling foothills of the western portion, where snow and frost are seldom seen, the elevation is slightly above the sea level, while along the eastern boundaries rise the snow-capped peaks of the Sierra Nevadas to an elevation of nearly 8,000 feet. The mean temperature, using Nevada City as the center, is about 68° Fahrenheit.

The principal towns in the county are Nevada City, with a population of 3,500; Grass Valley, 7,000, and Truckee, 2,000.

The Southern Pacific Railroad skirts the southern boundary line of the county for over 30 miles from west to east. From Colfax, on the line of the Southern Pacific Railroad, the Nevada County Narrow Gauge Railroad runs through Grass Valley, the metropolis of the county, to Nevada City, the county seat, a distance of 22 miles. Grass Valley and Nevada City, being only four miles apart, are also connected by an electric railroad. There is at present under course of construction what is known as the California Midland Railroad, which will connect Nevada City, Grass Valley, Auburn, of Placer County, and Marysville, of Yuba County.

Nevada County's splendid water system is also one of the many advantages so essential to the mine operator, farmer, and fruit grower. At the present time there is a network of ditches, canals, and waterways aggregating 1,000 miles in length, giving the finest water power and supply system in the State. The Pacific Gas and Electric Company have three large plants in and adjacent to our county supplying us with an unlimited amount of electricity for lighting and power purposes.

The principal industries are farming, stock raising, dairying, fruit growing, and mining.

In the Chicago Park section, which is on the line of the Nevada County Narrow Gauge Railroad, between Colfax and Grass Valley, the soil is particularly adapted to the culture of Bartlett pears, Hungarian prunes, and grapes, all of which are grown without irrigation, and large shipments are made each year, bringing top prices in all Eastern markets.

In the southwestern portion of the county, where there is an abundance of water, the farmers are turning their attention quite extensively to dairying, which is proving to be a very profitable business. The Penn Valley Creamery, being centrally located in that section, buys all the cream from the dairyman, and is on a dividend-paying basis.

In the extreme eastern end of our county, situated on the Truckee

River, the Floriston Pulp and Paper Company are operating one of the largest pulp and paper plants on the coast, employing in and about the plant about 180 men and turning out a yearly product to the value of \$500,000.

In the production of gold, Nevada County has for the past forty years been unsurpassed. Although it has been a continual producer since the year 1849, during which time it is estimated over \$250,000,000 have been taken out, still we believe that the industry is but in its infancy. Some of the mines are working at a depth of 4,000 feet, and have proven conclusively that in every instance where depth has been attained the ore bodies and the values are equally distributed.

Nevada County is a field for investors and homeseekers. It has unlimited undeveloped mineral wealth, superb climate, soil that will produce immensely, a school system of which we are justly proud (three high schools accredited to the university, two of which also carry commercial courses), clean newspapers, churches, banks, and towns and cities whose social standing are of the best. We have also in Grass Valley Armstrong's Business College, with a state-wide reputation for efficiency.

As to the development of its natural resources, it is practically in its infancy, and an investigation of capital and homeseeker alike is earnestly solicited.

STATISTICS OF NEVADA COUNTY, 1909-10.

General Statistics.				Fruits, Vegetables, Etc.		
Area 1,016 square miles, or 650,240 acres.					Total Production.	
Number of farms	420				Pounds.	Value.
Number of acres assessed	490,092			Green—		
Value of country real estate....	\$2,583,785			Apples	250,000	\$3,750
Of improvements thereon	\$1,535,480			Apricots	5,000	200
Of city and town lots	\$442,950			Blackberries	35,000	1,750
Of improvements thereon	\$1,278,400			Beans	14,000	700
Of personal property	\$1,127,135			Beets	15,000	300
Total value of all property	\$6,967,750			Cabbage	120,000	1,800
Expended on roads, last fiscal year	\$30,996			Celery	6,000	300
Expended for bridges, last fiscal year	\$4,576			Corn	25,000	375
Number of miles of public roads	650			Currants	750	60
Road levy per \$100, 1910	50c			Cherries	40,000	2,000
Value of county buildings	\$100,000			Figs	16,000	320
Irrigating ditches—miles, 1,000; cost	\$4,223,760			Grapes	100,000	2,000
Railroads, steam—miles, 53.41; assessed value	\$1,095,717			Loganberries	1,800	144
Railroads, electric—miles, 5.7; assessed value	\$47,200			Oranges (25-lb. boxes)	75	150
Electric power plants—4; assessed value	\$190,000			Pears	539,000	16,170
Electric power lines—miles, 124; assessed value	\$53,250			Peaches	150,000	3,000
Number of acres irrigated	560			Peas	8,000	320
Number of Fruit Trees and Vines.				Plums	32,250	970
	Bearing.	Non-bearing.	Total.	Irish potatoes	300,000	4,500
Apple	12,270	1,050	13,320	Prunes	100,000	2,000
Apricot	170	25	195	Raspberries	5,000	400
Cherry	285	80	365	Strawberries	4,000	320
Fig	340	10	350	Tomatoes	25,000	500
Lemon	15		15			
Nectarine	35		35	Total		\$42,029
Olive	55	45	100			
Orange	150		150	Dried—	Pounds.	Value.
Peach	12,760	950	13,710	Prunes	16,000	\$800
Pear	36,270	7,400	43,670	Walnuts	4,000	600
Plum	2,300	900	3,200			
Prune	5,800	235	6,035	Total		\$1,400
Quince	150		150			
Total fruit..	70,600	10,695	81,295	Cereal Products and Hay.		
Almond	150	105	255	Tons of 2,000 pounds.		
Chestnut	20	40	60		Acres.	Tons.
Walnut	400	680	1,080	Alfalfa hay	200	800
Total nut ...	570	825	1,395	Grain hay	6,185	6,185
Grapevines	760	30	790	Grass hay	200	200
Berries (acres)	40		40	Total hay	6,585	7,185
						\$147,700
				Wines, Brandies, Etc.		
					Gallons.	Value.
				Sweet wines	5,000	\$3,750
				Beer (barrels)	4,250	41,437
				Vinegar	3,500	875
				Number of wineries, 1 (small); number of breweries, 5 (small).		

STATISTICS OF NEVADA COUNTY, 1909-10—Continued.

Dairy Industry.			Forest Products.			
	Production.	Value.		Amount.	Value.	
Butter (pounds)	177,014	\$58,414	Area of timber lands (acres)	19,000	.....
Creameries, 1.			Cedar, pine, red-wood (acres)		\$190,000	
Live Stock Industry.			Sawmills (number)	5	.....
	Number.	Value.	Fuel, wood (cords).....	25,000	100,000	
Cattle—Beef	600	\$24,000	Lumber (feet)	20,000,000	300,000	
Stock	2,600	52,000	Paper pulp (tons)	8,750	240,625	
Dairy Cows—Graded..	1,875	75,000	Pickets (pieces)	40,000	800	
Calves	1,468	7,240	Posts (pieces)	4,000	1,000	
Swine	497	3,415	Shakes (thousand, ...)	400	4,000	
Horses—Standard-bred	221	33,650				
Common	1,496	149,600	Total value		\$836,425	
Colts	116	5,800	Power used for mills and manufactories in county—Steam (number), 20; electrical and water (number), 35.			
Mules	42	4,200	Manufactories.			
Sheep	5,000	15,000		No. Employees.	Value of Products.	
Lambs	1,300	3,250	Wood boxes	2	100	\$16,000
Common goats	370	740	Cigars	7	14	45,000
Total stock		\$377,395	Confectionery	4	4	6,000
Wool (pounds)	25,200	5,040	Foundries and iron works	8	30	150,000
Poultry and Eggs.			Meat products—			
	Dozen.	Value.	Hides			12,000
Chickens	1,500	\$6,750	Lard			6,000
Turkeys	40	1,200	Paper	1	180	500,000
Eggs	90,000	27,000	Manufactured Output.			
Total value		\$34,950			Quantity.	
Miscellaneous Products.			Cigars (thousand)		1,000	
	Pounds.	Value.	Paper (pounds)		16,000,000	
Natural ice (tons).....	150,000	\$375,000				
Granite (cubic feet) ..	1,250	2,800				
Macadam (tons)	1,304	571				

ORANGE COUNTY.

Orange County is bounded on the north by Los Angeles County, on the east by San Bernardino and Riverside counties, on the south by San Diego County, and on the west by the Pacific Ocean. The Santa Ana River enters the county on the northeast boundary and empties into the Newport Bay, furnishing irrigating water to the Anaheim Union Water Company and Santa Ana Valley Irrigating Company. The Santiago Creek furnishes water to and along the foothills east of Orange.

The Santa Fe, Pacific Electric, and Southern Pacific enter the county on the northwest boundary and run nearly parallel, meeting at Santa Ana, the Santa Fe continuing on to San Diego, and the Southern Pacific terminating at Newport Beach, and the Pacific Electric running to Huntington Beach. The Pacific Electric also enters the county on the northwest, running to Yorba Linda. The Santa Fe built a cut-off from Richfield to Fullerton.

San Juan by the Sea, Arch Beach, and Laguna Beach are open coast resorts. Corona del Mar, East Newport, Balboa, Newport Beach, and Port Orange are situated on Newport Bay, which is the best shipping point of the county. Huntington Beach, Sunset Beach, and Bay City, and Balboa are situated on the northwest and are connected with Newport Beach by the Pacific Electric. The Pacific States Tobacco Company have 40,000 acres of Turkish tobacco, this being the first Turkish tobacco grown in the county.

STATISTICS OF ORANGE COUNTY, 1909-10.

General Statistics.				Fruits, Vegetables, Etc.		
Area 780 square miles, or 489,200 acres.					Total Production.	
Number of farms	4,783			Green—	Pounds.	Value.
Number of acres assessed	443,247			Apples	511,800	\$5,118
Value of country real estate	\$13,222,775			Asparagus	38,000	1,900
Of improvements thereon	\$2,798,355			Blackberries (crates)	5,670	6,237
Of city and town lots	\$4,552,855			Cabbage	5,900,000	54,100
Of improvements thereon	\$2,545,380			Celery (cars)	1,212	275,720
Of personal property	\$4,490,730			Cauliflower (crates)	11,970	275,725
Total value of all property	\$27,783,810			Corn	80,000	800
Expended on roads and bridges, last fiscal year	\$87,760			Grapes (tons)	490	3,600
Road levy per \$100, 1910	40c			Grape fruit	3,840	3,840
Value of county buildings	\$124,490			Lemons (boxes)	43,392	151,872
Irrigating ditches (miles)	300			Oranges (boxes)	840,960	1,261,440
Railroads, steam — miles, 132				Olives (tons)	820	26,000
Railroads, electric — miles, 47; assessed value	\$782,510			Peaches	575,250	5,752
Electric power plants — 1; assessed value	\$171,180			Pears	108,500	1,085
Electric power lines — assessed value	\$48,140			Peas	160,000	4,000
Number of acres irrigated	31,547			Plums	38,100	762
Number of Fruit Trees and Vines.				Irish potatoes (sacks)	250,000	250,000
	Bearing.	Non-bearing.	Total.	Sweet potatoes	30,000	3,750
Apple	12,795	1,540	13,335	Prunes	519,600	25,980
Apricot	167,240	23,370	191,610	Raspberries (crates)	8,000	8,000
Fig	2,500		2,500	Strawberries (crates)	19,000	20,900
Lemon	92,655		92,655	Tomatoes	2,568,000	25,680
Olive	21,365		21,365	Total		\$2,176,271
Orange	759,785	213,115	952,900	Dried—	Pounds.	Value.
Peach	38,350	10,320	48,670	Apricots	1,700,000	\$170,000
Pear	5,425	375	5,800	Beans (sacks)	210,000	672,000
Plum	1,270		1,270	Peanuts	60,000	2,400
Prune	17,320		17,320	Walnuts	9,107,658	910,765
Total fruit			1,347,425	Canned—	Cases.	Value.
Walnut	152,220	95,250		Peaches	7,332	14,664
Grapevines			590	Tomatoes	20,000	30,000
Berries (acres)			310	Assorted	12,696	88,000
				Fish Industry.		
					Pounds.	Value.
				All kinds	787,800	\$26,563

STATISTICS OF ORANGE COUNTY, 1909-10—Continued.

Wines, Brandies, Etc.

	Gallons.	Value.
Dry wines	60,000	\$12,000
Sweet wines	30,000	9,000
Beer (barrels)	10,050	90,450
Brandy	6,000	6,000

Number of wineries, 4; number of distilleries, 3; number of breweries, 1.

Dairy Industry.

	Production.	Value.
Butter (pounds)	142,152	\$56,850
Cheese (pounds)	273,750	82,125

Total value \$138,985
Creameries, 1; skimming stations, 5.

Live Stock Industry.

	Number.	Value.
Cattle—Beef	347	\$13,880
Stock	8,500	25,500
Dairy Cows—Graded and thoroughbred ..	5,141	257,050
Shorthorn heifers	189	3,780
Calves	1,565	9,390
Swine	1,037	12,444
Horses—Thoroughbred ..	39	7,800
Common	7,649	780,000
Colts	1,257	63,850
Jacks and jennies	2	1,000
Mules	2,035	407,000
Sheep	18,030	63,105
Lambs	7,330	18,325

Total stock \$1,663,124
Wool (pounds) 216,360 52,963

Poultry and Eggs.

	Dozen.	Value.
Chickens	16,500	\$115,500
Ducks	2,200	17,600
Geese	150	3,520
Turkeys	225	4,500
Eggs	236,750	71,025

Total value \$212,145

Forest Products.

Eucalyptus (acres) \$20,000
Power used for mills and manufactories in county—Steam (number), 2; electrical (number), 1; water (number), 1.

Miscellaneous Products.

	Pounds.	Value.
Bees (hives), number.	8,500	\$25,000
Beeswax	9,500	2,850
Honey	550,000	33,000
Sugar beets (tons)....	110,000	605,000
Chili peppers, green (tons)	400	8,000
Chili peppers, dry	100	20,000
Apricot pits (tons) ...	105	12,600
Bean straw (tons).....	550	2,200
Crude oil (lubricating) 4,186,914		2,512,148

Manufactories.

	No. Employees.	Value of Products.
Bookbinderies	1	.....
Brick	1	20 \$110,000
Cigars	4	14 16,800
Flouring mills	1	15 175,255
Ice plants	2	15 19,534
Machinery	1	10 125,000
Olive oil	1	..... 750
Pickled olives	1	..... 400
Planing mills	5	80 160,000
Artificial stone	1	4 8,000
Sugar, beet	2	320 1,850,000
Tiling	2	12 78,361

Manufactured Output.

	Quantity.
Brick, common (thousand).....	200,000
Cigars (thousand)	480
Olive oil (gallons)	300
Pickled olives (gallons).....	800

Cereal Products and Hay.

	Tons of 2,000 pounds.		Value.
	Acres.	Tons.	
Wheat	5,000	2,500	\$87,500
Barley	34,120	27,296	545,920
Oats	4,375	1,750	52,500
Corn	2,590	1,345	40,350
Total cereals..	46,185	32,891	\$726,270
Alfalfa hay	4,000	20,000	200,000
Grain hay	25,350	16,742	200,904
Total hay	29,350	36,742	\$400,904

PLACER COUNTY.

Placer County lies between latitude $38^{\circ} 70'$ and $39^{\circ} 30'$. Its direction is northeast and southwest. It is about 100 miles long and of varying widths, from 10 to 30 miles, the course and distance being defined by the course of the rivers which mark its boundaries. It extends from about 8 miles from the Sacramento River to the summit of the Sierra Nevada Mountains. Just above Auburn, between the Bear and American rivers, the county is very narrow, being about 8 miles across. Above Auburn it widens out into the two divides lying between the Bear River and the Middle Fork of the American River. These are known as the Dutch Flat or Railroad Divide, and the Forest Hill Divide. The southwestern portion is more regular in shape than the part just described. This section contains the foothill and level agricultural lands. Its shape is nearly a parallelogram, the southwest two thirds being on the plains proper, and the southeast one third being the foothill and fruit district.

Of the area, 810 square miles are mountainous, 450 foothills, and the remainder valleys. The entire extent faces toward the west, extending from an altitude of some 40 feet on the plains in the western portion to over 7,000 feet at its eastern boundary line, embracing nearly every variety of climate known in the State. At the eastern boundary, separating it from the State of Nevada, is Lake Tahoe, one of the most picturesque lakes in America. The topography of Placer County is as irregular as is its shape. Imagine the whole Atlantic coast from Labrador to Tallahassee incorporated into one county, and one will have a fair idea of what may be found in Placer, exaggerated as to size, but not as to the great variety of climate, elevation, soils, and resources. As to the latter, the whole Atlantic seaboard can hardly equal the endless variety to be found within the borders of this county, which rivals Florida in the quality of its oranges, excels New Jersey in peaches, equals the New England States in its granite quarries, and compares favorably with Maine in the quality of its lumber.

From an elevation of about 2,500 feet up to the summit of the mountains snow falls in the winter, light at the lower edge of the line, and increasing in depth as it ascends the Sierra. Here is a strip of territory from the snow line up to an elevation of 3,000 feet, particularly well adapted to the apple, the pear, and a great variety of vegetables.

The soil of the western or valley portion is of the same general alluvial composition as all the soil in the Sacramento Valley, and is well adapted to the growth of grain. Over 30,000 acres are annually devoted to wheat, barley, oats, and hay. The low foothills back of Lincoln are excellent for the grape.

The soil of the valley lands is mostly a red loam, mixed with considerable clay in spots; that of the foothills is a gravelly red loam, in places light and sandy, and is excellent for the production of fruits. Further up the soil changes to a red character, with a slate bedrock. This, too, is very fertile. The agricultural region includes the valley and foothill lands all the way from the western boundary to an elevation above Colfax. The foothills everywhere possess a soil which only

needs cultivation. The granite soils around Newcastle are composed largely of clay, sand, soda, potash, lime, phosphorus, iron, and manganese. The constant decomposition that is going on appears to be of nearly endless duration, and of such a nature as to render the soil almost inexhaustible. Artificial fertilization has not yet been found necessary.

For an irrigation water supply, Placer has three sources—the Yuba, Bear, and American rivers. Including its branches, the Bear River irrigation ditch is 200 miles in length. This system has been increased in its capacity, and brings water from the Yuba River, so that an abundance is assured. There are several other canals, originally built for mining, but now used for irrigation.

Placer County holds a foremost position among the fruit producers, and it is the most easterly of the counties in California. With the Central Pacific Railroad running the entire length of her territory, she is one day nearer the Eastern market than any other part of the State, a very large item in the shipping of green fruit. In her thermal belt fruit ripens earlier than in most other places in the State, another large advantage. Pears, plums, prunes, apples, apricots, cherries, persimmons, pomegranates, quinces, and figs all do well. Peaches have been grown for the past twenty-five years, and failure of a crop is unknown. Fine oranges are produced, and Placer holds a position beside Butte in the northern citrus belt. In the production of small fruits, berries, and table grapes, Placer holds a foremost place.

The largest cherry trees in the world are at the ranch of Robert Hector, from one of which has been picked as high as 3,000 pounds in one season. At the Pan-American Exposition Placer won gold medals for peaches, oranges, and grapes. An exhibit of fifty oranges averaged twenty-four ounces in weight.

A lemon that was on exhibition at the Sacramento Chamber of Commerce measured 22 inches in circumference the small way, and weighed three and a half pounds.

Olive growing is a profitable industry. The principal orchards are provided with manufacturing plants and are producing a very fine quality of oil.

Dairying and stock and poultry raising are extensive industries. Butter making is carried on in the summer, the mountain ranges providing plenty of natural feed; the butter is of a very fine quality.

Considerable quantities of vegetables are raised, not only for local consumption, but also for shipment abroad.

Much sugar and yellow pine, fir, spruce, and cedar are found in the mountains, and the lumber output from that section has been very large for many years. Oak and scrub pine abound all over the foothills, and fuel is plentiful.

Placer County ranks well up among the mining counties. Her average yearly contribution to the world's wealth is something above the million mark. The total production since the discovery of gold at Auburn, May 16, 1848, is estimated at much over \$75,000,000. The mining methods include drift, river, placer, and quartz. Placer's drift mines are among the largest in the world.

The granite quarries rank with the best in the United States. Nearly all the street curbing in San Francisco is from the Placer quarries,

while the State Capitol is an example of the value and beauty of foothill granite.

Potter's clay is found in abundance at Lincoln, from which is manufactured sewer pipe, tiling, pressed brick, architectural terra cotta, and glazed brick for interior decoration.

Placer County is a natural sanatorium. As a resort for patients suffering from pulmonary diseases, leading physicians say it has no equal on the Pacific coast. It is here patients find relief, and some of them are cured. The altitude is just right for people suffering from asthma or bronchial diseases.

STATISTICS OF PLACER COUNTY, 1909-10.

General Statistics.			Number of Fruit Trees and Vines.		
Area, 1,390 square miles.				Bearing.	Non-bearing.
Number of farms	1,027		Apple	19,480	3,175
Number of acres assessed	667,100		Apricot	7,485	950
Value of country real estate	\$4,538,265		Cherry	23,480	2,690
Of improvements thereon	\$1,047,270		Fig	5,980	395
Of city and town lots	\$955,660		Lemon	675	
Of improvements thereon	\$1,409,315		Nectarine	6,940	785
Of personal property	\$1,641,535		Olive	29,470	1,180
Total value of all property	\$9,777,045		Orange	37,260	6,490
Expended on roads, last fiscal year	\$47,900		Peach	994,250	190,260
Expended for bridges, last fiscal year	\$11,375		Pear	104,600	19,120
Number of miles of public roads	915		Plum	239,300	39,470
Road levy per \$100, 1910	40c		Prune	20,465	2,980
Value of county buildings	\$260,000		Quince	1,980	350
Irrigating ditches—miles, 194; cost	\$215,300		Total fruit	1,491,365	267,845
Railroads, steam—miles, 140.47; assessed value	\$3,419,543		Almond	5,940	975
Railroads, electric—miles, 1.3; assessed value	\$6,158		Walnut	370	
Electric power plants—3; assessed value	\$39,400		Total nut	6,310	975
Electric power lines—miles, 90; assessed value	\$45,000		Grapevines (acres)		4,948
Number of acres irrigated	160,750		Fruits, Vegetables, Etc.		
Cereal Products and Hay.			Total Production.		
	Acres.	Bushels.		Pounds.	Value.
Wheat	15,940	175,340	Green—Apples	287,100	\$4,890
Barley	9,340	149,440	Apricots	317,900	13,740
Oats	7,100	71,900	Blackberries	119,700	5,750
			Currents	4,960	470
Total cereals	32,380	396,680	Cherries	502,000	47,300
			Figs	10,950	980
Live Stock Industry.			Grapes	1,859,300	49,200
	Number.	Value.	Lemons (boxes)	340	390
Cattle—Beef	1,690	\$47,750	Loganberries	69,200	4,900
Stock	1,749	26,235	Nectarines	13,970	465
Dairy Cows—Graded..	2,319	57,975	Oranges (boxes)	57,350	59,275
Thoroughbred—			Pears	4,290,600	41,900
Jersey	109	4,360	Peaches	15,701,600	304,175
Calves	640	3,790	Persimmons	16,900	1,140
Swine	765	2,460	Plums	9,940,200	247,560
Horses—Thoroughbred	8	3,750	Quinces	18,400	280
Standard-bred	11	2,875	Raspberries	42,300	1,740
Common	2,095	89,000	Strawberries	178,900	7,985
Colts	210	5,950	Tomatoes	173,900	3,160
Jacks and jennies	47	1,150	Totals	33,605,570	\$795,800
Mules	391	19,750	Dried—		
Sheep	19,600	58,800	Almonds	Pounds.	Value.
Lambs	1,470	1,470	Apples	6,740	\$275
Common goats	1,260	1,260	Figs	3,700	220
Total stock	32,364	\$326,575	Plums	10,300	890
Wool (pounds)	76,000	9,700	Pears	18,400	750
			Peaches	81,400	2,490
Wines, Brandies, Etc.			Prunes	19,760	790
	Gallons.	Value.	Walnuts	4,300	215
Dry wines	137,400	\$39,400	Totals	144,600	\$5,540
Sweet wines	119,700	28,300	Dairy Industry.		
Brandy	8,450	7,670		No. Production.	Value.
Vinegar	5,600	560	Creameries	4	79,700
Number of wineries, 2.			Butter (pounds) ..	7,500	\$18,150
					2,000

STATISTICS OF PLACER COUNTY, 1909-10—Continued.

Forest Products.			Manufactories.			
	Amount.	Value.		No.	Number of	Value of
Area of timber lands (acres)	100,000	\$1,000,000	Cigars	3	12	\$21,300
Sawmills (number)...	3	38,000	Confectionery	2	6	4,700
			Olive oil	2	10	9,800
Total value		\$1,038,000	Pickled olives			1,000
Power used for mills and manufactories in county—Steam (number), 5; electrical (number), 4; water (number), 3.			Sewer pipe			320,000
			Planing mills	2	10	33,000
			Potteries	1	400	394,500
			Granite (950 cars)...		200	.....
Miscellaneous Products.			Manufactured Output.			
	Pounds.	Value.				Quantity.
Flowers and plants			Brick (thousand)			2,000
(acres)	30	\$30,000	Olive oil (gallons)			4,900

RIVERSIDE COUNTY.

Riverside County was formed in 1893 from the southwestern part of San Bernardino and the northern part of San Diego counties. It is about 200 miles long by 40 miles wide, and embraces most varied geographical and topographical features, climate, scenery, soil, agricultural, horticultural, and mineral resources. It contains within its borders one of the highest mountains of southern California and the greatest depression below sea level.

The principal rivers of the county are the Colorado, which forms its eastern boundary; the Santa Ana, having its head in the San Bernardino range of mountains, flowing through the northwestern part of the county, furnishing irrigation for a large area of land; the San Jacinto, having its source in the San Jacinto range, flowing through the San Jacinto, Hemet, and Perris valleys, and forming Lake Elsinore.

While the progress of the county has been practically confined to its northwest corner, which embraces the largest orange growing district in the world, and is supplied by one of the best and most complete irrigating systems in the State, the entire western portion is being brought under cultivation from the rapid development of artesian wells.

Beaumont and Banning, two growing towns and prosperous communities of the "Pass country," are well known for their deciduous fruits, hay and grain crops, and stock interests. Further east the Coachella Valley is producing vegetables, melons, and cantaloupes extensively, which, on account of early maturity, reach the markets in advance of other localities. The valley has four trading points—Indio, Coachella, Thermal, and Mecca, all growing communities. The Government has two experimental stations in this valley for the propagation of the date palm, and already has trees in bearing. The excellence of the fruit proves this locality to be well adapted to this industry. Quite an acreage of eucalyptus is being planted, and spineless cactus is receiving some attention.

The Palo Verde country, in the extreme eastern portion and bounded by the Colorado River, is receiving a great deal of attention and promises to develop into a very prosperous agricultural community.

The central and greater part of the eastern portion of the county is desert, but known to be heavily mineralized with almost every known mineral—gold, silver, copper, iron, lead, tin, borax, soda, and nitrates. The high cost of freight, fuel, and scarcity of water, making prospecting dangerous, all combine to retard mining developments, but as transportation facilities increase mining will be one of the leading features of the county.

The San Jacinto and Hemet valleys, situated about 45 miles southeast of Riverside City, at the base of the San Jacinto Mountains, are excellently adapted to diversified farming, and the foothills to stock grazing. The San Jacinto Valley is watered by numerous flowing wells and the Hemet Valley by the great Hemet dam, the largest piece of solid masonry in the West, forming a reservoir filled with pure mountain water from the snows of the San Jacinto Mountains, the supply of which is more than sufficient for all purposes and irrigation. The town of Hemet is one of the most prosperous of the county. Three miles distant is San Jacinto, one of the oldest towns in southern California, and

has maintained a steady growth from its farming, dairying, and lumber interests, the mountains adjacent being heavily timbered. A branch of the great Cawston Ostrich Farm is located here, and the town has a reputation as a health resort on account of its lithia and hot sulphur springs. The potato is one of the staples for which Hemet is famous. Alfalfa and broomcorn are grown extensively. All kinds of deciduous fruits do well, and quite an acreage of citrus fruit is in bearing.

The town of Elsinore, situated about 20 miles southwest on the shore of Lake Elsinore, is made prosperous from its varied products. Dressed stone, clay and clay products, honey, dried fruits, olives, olive oil and all kinds of farm products. It is famed as a health resort, the hot sulphur springs located on the north side of the lake being remarkable for healing qualities in some forms of disease.

Perris is a thriving village situated about halfway between the city of Riverside and Hemet. The Perris Valley, including Alessandro and Moreno, is making wonderful progress. The soil is very fertile and the discovery and development of an underground lake with practically unlimited water supply has opened up new industries, and hundreds of acres of alfalfa are being sown. The eucalyptus industry is receiving its share of attention and quite an extensive acreage is being planted in these sections. Transportation is furnished by the Santa Fe Railway.

Corona, the second city in size in the county, is known for its lemon groves, which are among the best in the world, as well as its fine orange groves and its many manufacturing enterprises. Clay products comprise the manufacture fourth in importance in the United States and of importance in the county the clay industry is first, the deposits being marvelous and of almost inexhaustible supply.

Riverside, the metropolis and county seat, is noted as being one of the most beautiful cities in California; has more miles of oiled macadam streets than any community of like size, and takes great pride in keeping them clean. It claims to be the greatest orange growing center in the world, the annual production being over six thousand car loads. It is a city of churches, all denominations being represented, together with its magnificent county buildings, public library, commodious public school buildings of architectural beauty; a bountiful water supply, electric railway system, electric and gas plants, cement works employing upward of three hundred men, station for three continental railway systems, and no saloons, are features which go to make up a happy and contented citizenship.

Arlington, a suburb of Riverside and contained in its municipality, is a progressive village and the seat of Sherman Institute, a Government school for Indians.

The public school system of the county is very efficient and ample, there being sixty-five school districts, in eight of which are high schools.

STATISTICS OF RIVERSIDE COUNTY, 1909-10.

General Statistics.		General Statistics—Continued.	
Area 7,000 square miles, or 4,480,000 acres.		Number of miles of public roads	2,000
Number of acres assessed	1,177,553	Road levy per \$100, 1910	60c
Value of country real estate	\$10,208,985	Value of county buildings	\$388,437
Of improvements thereon	\$3,611,448	Irrigating ditches—miles, 132; cost	\$1,688,537
Of city and town lots	\$2,659,307	Railroads, steam—miles, 210.369; assessed value	\$4,706,996
Of improvements thereon	\$3,358,200	Railroads, electric—miles, 16.69; assessed value	\$28,765
Of personal property	\$2,382,398	Electric power plants—1; assessed value	\$52,035
Total value of all property	\$22,218,835	Electric power lines—miles, 16.5; assessed value	\$3,555
Expended on roads, last fiscal year	\$136,607		
Expended for bridges, last fiscal year	\$6,203		

STATISTICS OF RIVERSIDE COUNTY, 1909-10—Continued.

Cereal Products and Hay.

	Tons of 2,000 pounds.		
	Acres.	Bushels.	Value.
Wheat	4,398	28,282	\$39,936
Barley	66,855	715,550	417,450
Oats	3,170	36,630	43,080
Corn	50	2,250	2,250

Total cereals.. 74,473 782,712 \$502,696

	Acres.	Tons.	Value.
Alfalfa hay	11,607	66,400	\$600,334
Grain hay	37,281	28,710	297,240

Total hay 48,888 95,110 \$897,574

Number of Fruit Trees and Vines.

	Bearing.	Non-bearing.	Total.
Apple*	1,758	4,524	6,282
Apricot	44,726	42,606	87,332
Cherry	55	79	134
Fig	190	635	825
Lemon	91,345	51,871	143,216
Nectarine	21	75	96
Olive	52,720	20,147	72,867
Orange	1,254,156	86,152	1,340,308
Peach	24,743	27,572	52,315
Pear	7,934	775	8,709
Plum	190	500	690
Prune	5,566	70	5,636
Quince	15	41	56

Total fruit..... 1,618,448

Almond	1,120	31	1,151
Walnut	2,975	16,563	19,538

Total nut 20,689 |

Grapevines			
(acres)	2,850	27	2,877
Berries (acres) ..	8		8

Fruits, Vegetables, Etc.

	Total Production.	Value.
	Pounds.	
Green—		
Apples	45,100	\$710
Apricots	3,003,000	27,995
Blackberries	2,500	125
Beets	2,000	80
Cabbage	56,000	950
Cherries	30,000	2,500
Figs	6,000	120
Grapes	9,460,000	73,600
Grape fruit	8,355	24,538
Lemons (boxes) ..	459,765	1,325,447
Onions	676,500	12,875
Oranges (boxes) ..	1,495,006	2,137,530
Olives	696,000	19,661
Pears	575,000	8,170
Peaches	2,098,000	14,260
Plums	87,050	730
Irish potatoes	270,000	3,500
Sweet potatoes	25,000	500
Tomatoes	325,000	9,500
Cantaloupes	1,500,000	20,000
Watermelons	700,000	4,500

Total value \$3,697,431 |

	Pounds.	Value.
Dried—		
Almonds	130,000	15,600
Apricots	352,300	31,230
Onions	1,200	240
Pears	15,000	1,000
Peaches	72,000	3,840
Prunes	250,000	10,000
Raisins	120,000	3,500
Walnuts	12,000	1,560

Total value \$66,970 |

Dairy Industry.

	No. Production.	Value.
Creameries	4	\$11,950
Butter (pounds) ..	471,813	161,229
Sweet milk (gals.) ..	214,710	82,413

Total value \$255,592 |

Wines, Brandies, Etc.

	Gallons.	Value.
Dry wines	161,500	\$120,550
Sweet wines	225,000	170,000
Brandy	96,000	144,000

Number of wineries, 3; number of distilleries, 1.

Live Stock Industry.

	Number.	Value.
Cattle—Beef	330	\$11,950
Stock	3,210	64,250
Dairy Cows—Graded..	1,359	65,785

Thoroughbred—		
Holsteins	126	8,820
Jersey	182	12,740
Shorthorns	94	6,580
Calves	569	6,489
Swine	1,886	19,271
Horses—Thoroughbred	3	4,500
Standard-bred	1,395	187,850
Common	1,545	122,505
Colts	409	20,970
Jacks and jennies	12	7,160
Mules	505	89,600
Sheep	4,700	20,100
Lambs	2,120	6,240
Common goats	87	292

Total value \$655,102 |

Wool (pounds) 20,000 2,000 |

Poultry and Eggs.

	Dosen.	Value.
Chickens	3,902	\$28,290
Ducks	44	285
Geese	25	299
Turkeys	700	14,760
Eggs	428,633	122,858

Total value \$166,492 |

Power used for mills and manufactories in county—Steam (number), 4; electrical (number), 8.

Miscellaneous Products.

	Pounds.	Value.
Bees (hives), number.	11,092	\$31,089
Beeswax	2,665	733
Broomcorn	10,000	750
Flowers and plants	34	7,000
(acres)	24,030	2,879
Honey—Comb	301,280	18,095
Extracted	45,900	4,590
Alfalfa seed	125,000	22,500
Cotton		

Manufactories.

	No.	Number of Employees.	Value of Products.
Bookbinderies	1	6	\$8,000
Brick	2	18	28,000
Cement	1	375	214,500
Cigars	2	7	17,500
Crushed rock	3	175	
Confectionery	5	21	45,000
Foundries and iron works	3	87	143,500
Ice	1	17	146,000
Sewer pipe	2	110	181,000
Pressed firebrick	2		88,000
Planing mills	2	65	146,000
Artificial stone—Pipe ..	2	8	22,400
Blocks	2	7	20,500
Granite	2	9	24,975
Cotton gin	1		

Manufactured Output.

	Quantity.
Brick	250,000
Cement (tons)	13,000
Cigars	350,000
Ice (tons)	18,250
Crushed rock (tons)	185,730

SACRAMENTO COUNTY.

Sacramento County, with its 987.66 square miles (or 632,108 acres) of area, is one of the largest in the Sacramento Valley, as well as one of the oldest in the State, having been organized by the first legislature. Its principal cities and towns are: Sacramento, Folsom, Galt, Elk Grove, Fair Oaks, Courtland, Oak Park, Walnut Grove, Isleton, Franklin, and Cosumnes.

Its area is almost all rich, alluvial plain, ranging from 30 to 125 feet above sea level, rising gradually from the rivers to meet the low rolling foothills of the Sierra Nevada Mountains.

The Sacramento River is the longest and largest in the State, and is navigable from Red Bluff to San Francisco Bay, giving unexcelled transportation facilities, landing freight on deep water vessels at a minimum of cost. The river traverses the western boundary of the county in a tortuous manner for about ninety miles across the rich bottom or delta lands, cutting them up into numerous small and several large islands, said to be the richest land in the world.

The American River rises in the upper Sierra and enters the county at the northeast corner among the low foothills, flowing in a southwesterly direction and emptying into the Sacramento just north of the city of Sacramento.

In addition to the numerous rivers and streams, there is underlying the entire area of the county an inexhaustible supply of pure and excellent water, which rises to within a few feet of the surface, and is easily appropriated by means of a light lifting power, insuring an unlimited supply for irrigation and domestic purposes.

The natural fish in the rivers are salmon, sturgeon, pike, perch, hard-heads, and dace. Those planted are striped bass, black bass, shad, and three kinds of catfish. The only fish propagated is the salmon, in the headwaters of the Sacramento. All of the planted fish have multiplied satisfactorily. In the open season large numbers of salmon and other fish are taken and sold in the local and San Francisco markets.

In the line of game are geese, ducks, quail, curlew, doves, and larks. All but the geese are protected. The ducks are mostly migratory. Of the non-migratory species are the mallard, spoonbill, and wood duck.

General John A. Sutter settled in Sacramento in 1837, and was the first agriculturist in the Sacramento Valley. He received the concession of a large tract of land from the Mexican government, and located a fort near the junction of the Sacramento and American rivers. His first wheat field was a portion of the land now covered by the city of Sacramento. He planted the first fruit trees and grapevines, and demonstrated the unsurpassed fertility of the soil of the great valley to the north.

The richness of the soil is due largely to the fact that in remote ages the entire Sacramento Valley and a section of the foothills, to an altitude of several hundred feet, were portions of the bed of an inland sea, and that into this sea the washings of the surrounding mountains were precipitated, forming what has been shown by analyses to be exceptionally fertile soil.

Sutter's demonstration of the productiveness of the soil encouraged others to continue the work, and enormous profits were made on all farm products, although the greatest areas of the county and valley were devoted to grains, such as wheat, barley, etc. Later, settlers undertook the planting of large orchards, and as there was a constantly increasing demand in the eastern markets for California fruits, the acreage was increased in an attempt to keep pace with the demand. Portions of Sacramento County were found to be especially adapted to the growth of oranges and other citrus fruits, oranges ripening from four to six weeks earlier than those of southern California, and large areas were and are being planted. Fruits of all kinds, citrus, deciduous, natives of the temperate, semi-tropic, and many of those of the tropic zones, are successfully grown on the lands of the county. The largest Tokay vineyard in the world is in Sacramento County. The largest cherry orchard in the State is projected and being planted, and there are still thousands of acres awaiting the hand of the orchardist.

Strawberries are marketed here eleven months in the year, and fresh vegetables are obtainable the year round. The largest asparagus beds in the world are within the confines of Sacramento County. Alfalfa grows luxuriantly without irrigation on the rich bottom lands, producing from four to eight tons to the acre.

Apriots ripen early, and of all the countries in the world, California stands alone as having made a thorough success of the cultivation of this delicious fruit, and in Sacramento County it reaches its finest development in size and flavor and productiveness.

The almond, one of the most difficult of all crops because of its susceptibility to frost, is exceptionally profitable here, and a large colony at Antelope has given its entire attention to this most profitable nut.

The English soft-shell walnut has been demonstrated to be a profitable crop, and it is expected that in the next few years large acreages will be devoted to its cultivation.

The olive is constantly increasing in favor and netting splendid returns to the growers. Some of the finest olive lands in the world are in the confines of the county.

The dry atmosphere is especially suited for the drying of fruits, and the article so produced is regarded as first-class in the markets of the world.

The farmer is sure of a good market for all of his surplus fruit, as the California Fruit Cannery Association and the Central California Canneries are located within the county, and handle enormous quantities of fruits and vegetables. These canneries operate a longer period of the year than in any other section of the United States, beginning on asparagus the latter part of March and ending the latter part of November on beans and tomatoes.

The river districts are the most prolific producers of beans in the world, and great quantities are shipped annually to the East. Broom-corn, Egyptian corn, potatoes (both sweet and Irish), asparagus; in fact, all kinds of vegetables thrive and yield splendid profits, many of them having two growing seasons. It is quite common to market two crops from the same land every year.

Along the Sacramento, American, and Cosumnes rivers are the most productive hop fields in the United States. Hop culture on this coast dates back to 1858. It was early demonstrated that the soil and cli-

mate of Sacramento County are unsurpassed for hop culture, and it is the only place known where a crop of from 1,000 to 2,000 pounds per acre can be grown the first year the roots are planted. It is a common occurrence to grow 2,000 to 3,000 pounds on an acre of ground, and in some instances 4,000.

Sacramento County presents splendid opportunities to the live stock breeder and the dairyman. There are a number of large creameries in the county and the largest and most modern dairy on the coast is located here. The climate is so temperate and mild that animals remain in the open air practically unsheltered the year round without hardship. The soil, because of its fertility, is peculiarly adapted to the growth of forage crops, especially alfalfa, which is at the same time one of the cheapest of stock feeds.

Hogs are raised generally by the farmers, and pedigreed Poland China, Berkshire, and Essex swine are bred quite extensively, and have proven very profitable.

Poultry raising has steadily increased in importance in the last few years. Elk Grove, Galt, and Folsom are among the principal poultry raising districts, and in the outskirts of Sacramento City this has been made a specialty by many with profit.

There are a number of wineries in the county. The output is shipped all over the world, but is principally disposed of in the United States, Central America, and the islands. The port is not heavy in body nor dark in color, but is delicate and light, having great character, and resembling closely the light, high-grade ports of Portugal. The county has a great reputation for fine sherry.

Many new industries are augmenting the large list of those in the county, notably among which are the Sacramento Soap Factory, two brick factories, and several minor ones. Negotiations have been closed, recently, for the establishment of a factory for the manufacture of automobiles.

The largest rock-crushing plant in the world is located in the county, supplying many thousands of tons of crushed rock for the many uses made of it.

Sacramento is the railroad center of the State, and many new lines are either building or projected, radiating in all directions from the capital city, the home of the main shops of the Southern Pacific and Western Pacific systems. Splendid interurban service from Sacramento to Chico is given by the Northern Electric Railway Company; and by the Central California Traction Company, also an electric line, from Sacramento to Stockton.

The Southern Pacific and California Transportation Company operate passenger, as well as freight steamers, touching the various river points. Several of these steamers are palatial in their fittings, providing every comfort for the passenger, and this mode of travel is deservedly popular. Several minor companies operate freight steamers not only to San Francisco, but north as far as Red Bluff, giving low transportation rates to all points touched by the river.

In the splendid rail and water transportation facilities (having two great transcontinental lines passing through the city and being connected with the third, the Santa Fe, by the Central California Traction Company, at Stockton, giving competing rates to all points East), Sac-

ramento is endowed with advantages equaled by no other city on the coast. Practically unlimited electrical power is generated in the foothills and high Sierra and delivered into the city by the Great Western Power Company and the Sacramento Electric, Gas and Railway Company for factory, heating, lighting, and street railway purposes, at a low cost.

Situated on the east bank of the Sacramento River, 90 miles distant by rail from San Francisco, the seat of state and county government, the city is rapidly taking first place as a commercial center, having some of the largest jobbing houses on the coast, and splendid retail stores catering to the wants of the residents of California, southern Oregon, and Nevada. It is the largest mail-order center west of Chicago, practically controlling this branch of the trade.

The magnificent State Capitol is one of the most symmetrical in outline of any in the United States. The building is located in a beautiful park of thirty-five acres in the heart of the city. This park is unique, containing over three hundred varieties of trees and shrubs from every known climate of the globe, a practical demonstration of the remarkable climate of this section of the State.

The city owns the finest art gallery in the West. Sutter's Fort has been restored to the same condition as when built by the general in 1839, and stands as a testimonial of the hardships endured by the early settlers. The fort is situated in a park of four acres in extent and is of intense interest to tourists. New buildings are springing up on every hand; buildings that would be a credit to cities double the size. The last Federal census shows an increase of over 52 per cent over the report of the last enumeration. The new high school building has recently been completed at a cost of a quarter of a million of dollars. Churches, educational facilities, and amusement features are unsurpassed. The Federal building, of red sandstone, costing \$200,000, accommodates the post office, internal revenue, and land offices, and the weather bureau station. The water works are the property of the city. Natural gas wells in the city yield an abundance of gas for domestic purposes, heating, and cooking.

The climate is particularly adapted to outdoor life. One can drive in any direction and wind through beautiful country of vineyards, orchards, and fields, and lands covered with beautiful natural oaks. Where one wants a day's pleasure beyond the limits of the county, it is an easy matter to ride on the trains from roses to snow in the high Sierra.

Over one hundred and four miles of oil-macadam roads have been constructed in the past two years, making arteries radiating in all directions to the county's boundaries. These roads are as level as a table, and constructed for years of service.

STATISTICS OF SACRAMENTO COUNTY, 1909-10.

General Statistics.

Area 987.66 square miles, or 632,108 acres.	
Number of farms	1,800
Number of acres assessed	610,720
Value of country real estate.....	\$13,934,430
Of improvements thereon	\$1,874,320
Of city and town lots	\$3,701,500
Of improvements thereon	\$1,472,410
Of personal property	\$2,894,755
Total value of all property.....	\$58,620,075
Expended on roads, last fiscal year	\$512,990
Expended for bridges, last fiscal year	\$137,413
Road levy per \$100, 1910	47c
Value of county buildings	\$477,995
Irrigating ditches, cost	\$117,500
Railroads, steam—miles, 147.96; assessed value	\$2,950,831
Railroads, electric—miles, 49.2; assessed value	\$87,630
Electric power plants (number)	3
Electric power lines (miles)....	63

Cereal Products and Hay.

Tons of 2,000 pounds.			
	Acres.	Tons.	Value.
Wheat	40,000	12,500	\$225,000
Barley	12,500	6,000	175,000
Oats	100,500	250,000	75,000
Rye	450	125	4,500
Corn	700	200	6,000
Buckwheat	100	25	750
Total cereals.....	154,250	43,850	\$486,250
Alfalfa hay	45,000	200,000	\$2,000,000
Grain hay	33,500	45,000	402,000
Total hay	78,500	245,000	\$2,402,000

Wines, Brandies, Etc.

	Gallons.	Value.
Dry wines	400,000	\$60,000
Sweet wines	200,000	360,000
Beer (barrels)	160,000	1,200,000
Brandy	10,000	15,000
Grape juice	5,000	2,500
Number of wineries, 10; number of distilleries, 10; number of breweries, 2.		

Dairy Industry.

	Production.	Value.
Butter (pounds)	2,730,000	\$950,000
Cheese (pounds)	1,550,000	175,000
Creameries, 6; skimming stations, 5.		

Number of Fruit Trees and Vines.

	Bearing.	Non-bearing.	Total.
Apple	27,000	500	27,500
Apricot	40,000	20,000	60,000
Cherry	35,000	5,000	40,000
Fig	4,000	500	4,500
Lemon	6,000	500	6,500
Nectarine	1,200	250	1,450
Olive	28,000	3,000	28,000
Orange	60,000	5,500	65,500
Peach	145,000	28,000	173,000
Pear	340,000	20,000	360,000
Plum	100,000	12,000	112,000
Prune	65,000	9,500	74,500
Quince	1,150	200	1,350
Other kinds ..	12,000	1,000	13,000
Total fruit..	861,350	105,950	967,300
Almond	72,000	8,000	80,000
Chestnut	1,500	500	2,000
Pecan	2,700	950	3,650
Walnut	6,000	1,000	7,000
Other nuts ...	5,000	1,000	6,000
Total nut ...	87,200	11,450	98,650
Grapevines ...	400,000	25,000	425,000
Berries, acres.	5,000	1,500	6,500

Fruits, Vegetables, Etc.

	Total Production. Pounds.	Value.
Green—		
Apples	402,000	\$10,000
Apricots	2,200,000	32,000
Asparagus	20,000,000	200,000
Blackberries	100,000	650
Beans	175,000,000	2,500,000
Beets	1,500,000	23,500
Cabbage	3,500,000	33,000
Celery	300,000	5,800
Cauliflower	15,500	750
Corn	85,000	1,875
Currants	250,000	12,400
Cherries	225,500	16,600
Figs	150,000	5,500
Gooseberries	28,000	2,000
Grapes	28,000,000	155,900
Grape fruit	5,300	550
Limes (boxes)	6,500	25,000
Lemons (boxes)	24,000	96,000
Loganberries	9,900,000	200,000
Nectarines	25,000	1,200
Onions	35,000,000	525,000
Oranges (boxes)	45,800	46,000
Olives	125,000	3,700
Pears	22,000,000	1,500,000
Peaches	15,000,000	125,000
Peas	300,000	10,000
Persimmons	2,000	1,185
Plums	8,100,000	125,000
Irish potatoes	100,000,000	900,000
Sweet potatoes	65,000	700
Prunes	6,250,000	100,000
Quinces	2,100	1,25
Raspberries	75,000,000	102,500
Strawberries	15,200,000	250,000
Tomatoes	7,000,000	92,500
Totals	478,307,700	\$8,553,330

	Pounds.	Value.
Dried—		
Almonds	1,000,000	\$100,000
Apples	60,500	3,500
Apricots	424,800	15,500
Beans	14,000,000	2,000,000
Chestnuts	12,500	1,150
Figs	85,000	2,550
Nectarines	5,000	325
Onions	34,900,000	375,000
Pears	400,000	16,500
Peaches	2,100,000	9,750
Peas	168,500	7,800
Plums	1,400,000	85,000
Prunes	1,250,000	40,000
Raisins	500,000	13,000
Walnuts	33,500	5,500
Totals	182,339,800	\$2,599,075

	Cases.	Value.
Canned—		
Apples	12,500	\$25,000
Apricots	28,000	56,000
Blackberries	6,000	33,000
Beans	5,000	20,000
Cherries	16,000	50,000
Grapes	23,000	66,000
Pears	7,000	225,000
Peaches	10,000	300,000
Plums	25,000	55,000
Raspberries	8,500	18,500
Strawberries	11,500	40,500
Tomatoes	90,000	360,000
Asparagus	230,000	1,380,000
Squash	10,000	25,000
Pumpkin	10,000	25,000
Totals	647,500	\$2,679,000

Fish Industry.

	Pounds.	Value.
Salmon	835,200	\$88,500
Other kinds	900,000	72,000
Totals	1,735,200	\$160,500

STATISTICS OF SACRAMENTO COUNTY, 1909-10.

Live Stock Industry.

	Number.	Value.
Cattle—Beef	35,805	\$616,100
Stock	20,000	400,000
Dairy Cows—Graded..	14,025	325,000
Swine	57,500	287,500
Horses—Thoroughbred	300	450,000
Standard-bred	1,870	334,000
Common	17,650	1,175,000
Colts	4,200	40,000
Jacks and jennies	300	10,000
Mules	3,000	600,000
Sheep	51,452	206,710
Common goats	300	.....
Wool (pounds)	300,000	.....
Mohair (pounds)	25,000	.....

Poultry and Eggs.

	Dosen.	Value.
Chickens	310,000	\$1,520,300
Ducks	400	2,400
Geese	350	5,100
Turkeys	2,200	55,000
Eggs	1,490,000	300,000

Total value \$1,882,800

Forest Products.

	Amount.	Value.
Area of timber lands (acres)	80,000	.....
Charcoal (sacks)	35,000	\$15,000
Fuel, wood (cords) ...	10,000	70,000

Power used for mills and manufactories in county—Electrical (16,000 horse-power).

Miscellaneous Products.

	Pounds.	Value.
Bees (hives), number.	2,200	\$6,100
Beeswax	2,000	520
Flowers and plants (acres)	50	50,000
Honey	75,000	10,000
Hops	3,833,060	459,967
Alfalfa seed	60,000	.....

Manufactories.

	No.	Number of	Value of
	Employees.	Products.	
Bookbinderies	2	20	.....
Paper boxes	1	8	.....
Wood boxes	2	13	.....
Brick	2	88	\$150,000
Brooms	2	22	40,000
Carriages and wagons	7	120	.....

Manufactories—Continued.

	No.	Number of	Value of
	Employees.	Products.	
Cement	2	12	\$18,500
Cigars	18	115	250,000
Coffee, spices, etc. . .	6	20	150,000
Confectionery	10	225	150,000
Cooper-shops	2	12	35,000
Crackers	2	42	150,000
Electrical supplies ..	2	12	150,000
Flouring mills	4	150	2,000,000
Foundries and iron works	5	45	85,000
Furniture	3	45	75,000
Jewelry	7	4	8,500
Leather goods	7	80	130,000
Machinery	13	180	500,000
Malt	6	35	150,000
Meat products—			
Hides			65,000
Lard			75,000
Meat packed			50,000
Tallow			220,000
Olive oil			2,500
Pickles	4	15	22,000
Pickled olives			15,000
Iron pipe	2	58	275,000
Sewer pipe	2	15	38,000
Planing mills	11	225	500,000
Potteries	3	15	35,000
Soap	1	25	150,000
Artificial stone	6	40	130,000
Granite	6	30	112,000
Syrups and extracts.	3	27	65,000
Tin and galvanized iron	10	170	250,000
Wood turning and carving	4	12	20,000
Sauerkraut			5,000
Paste	2	15	50,000

Manufactured Output.

	Quantity
Brick	20,000,000
Brooms (dozen)	8,000
Cement (tons)	5,000
Cigars (thousand)	5,500
Crackers (pounds)	18,000
Flour (barrels)	400,000
Malt (tons)	3,200
Hides (pounds)	725,000
Lard (pounds)	500,000
Meat packed (pounds) ..	20,000
Tallow (barrels)	45,500
Olive oil (gallons)	5,000
Pickles (gallons)	3,000,000

SAN BENITO COUNTY.

The county extends from northwest to southeast about sixty miles with a general breadth of twenty miles. The Gabelan Mountains on the southwest constitute the dividing line from Monterey County, and at their base flows northerly, the entire length, the San Benito River. Farther east the Tres Pinos forms another valley.

Irrigation is by gravity from the San Benito River and the Tres Pinos. The system is being rapidly improved by the San Benito Land and Water Company. This is supplemented by an extensive system of pumping from an apparent inexhaustible supply of underground flow, and further by artesian wells in the northern end of the county.

The San Juan Portland Cement Company's plant is not yet in operation.

The lime industry, though once large, has ceased, awaiting better transportation facilities.

The quicksilver product of the New Idria Mines goes on unceasingly. Furnaces are practically finished at two new mines, the Esmeralda and the Bradford.

Large deposits of potter's clay of superior quality lie easy of access, as well as sandstone and lime rock quarries.

Gypsum is heavily mined in the southern end of the county and a rock crushing plant is in the northern end.

Much development work for petroleum is going on in the southeast part of the county, and with good prospects.

STATISTICS OF SAN BENITO COUNTY, 1909-10.

General Statistics.				Cereal Products and Hay.			
Area 1,056 square miles, or 676,000 acres.				Tons of 2,000 pounds.			
Number of farms	1,300			Acres.	Bushels.	Value.	
Number of acres assessed	584,184			Wheat	2,000	39,360	\$30,700
Value of country real estate	\$4,370,005			Barley	25,000	50,353	20,141
Of improvements thereon	\$745,665			Oats	10,000	54,100	23,804
Of city and town lots	\$461,040			Corn	30	357	250
Of improvements thereon	\$559,410			Total cereals..	37,030	144,170	\$74,895
Of personal property	\$1,314,385			Alfalfa hay	1,500	4,500	\$45,000
Total value of all property.....	7,664,315			Grain hay	35,000	45,000	405,000
Expended on roads, last fiscal year	\$19,857			Total hay	36,500	49,500	\$450,000
Expended for bridges, last fiscal year	\$1,600						
Number of miles of public roads	114			Live Stock Industry.			
Road levy per \$100, 1910	33c				Acres.	Tons.	Value.
Value of county buildings	\$128,000			Cattle—Beef		8,750	\$300,000
Irrigating ditches (cost)	\$75,000			Stock		15,290	244,640
Railroads, steam—miles, 24.45; assessed value	\$456,639			Dairy Cows—Graded..		2,466	61,655
Electric power plants—1; assessed value	\$26,250			Thoroughbred—			
Number of acres irrigated	4,600			Shorthorns		80	5,000
Wines, Brandies, Etc.				Calves		3,440	33,295
	Gallons.	Value.		Swine		2,827	13,420
Dry wines	60,000	\$12,000		Horses—Thoroughbred		43	8,275
Beer (barrels)	1,636	10,635		Common		4,032	164,010
Brandy	1,000	400		Colts		1,814	37,000
Number of wineries, 1; number of distilleries, 1; number of breweries, 1.				Jacks and jennies		1	150
Dairy Industry.				Mules		45	1,760
	Production.	Value.		Sheep		10,628	21,255
Butter (pounds)	250,000	\$67,500		Lambs		4,600	4,600
Cheese (pounds)	477,600			Common goats		270	270
Creameries, 1.				Total value			\$895,420
				Wool (pounds)		126,200	19,000

STATISTICS OF SAN BENITO COUNTY, 1909-10—Continued.

Poultry and Eggs.			Number of Fruit Trees and Vines.			
	Dosen.	Value.		Bearing.	Non-bearing.	Total.
Chickens—			Apple	17,000	1,200	18,200
In county	8,800	\$38,500	Apricot	36,000	2,000	38,000
Shipped to market..	4,165	19,800	Cherry	2,200	.....	2,200
Ducks	145	715	Peach	15,000	1,000	16,000
Geese	13	165	Pear	7,000	.....	7,000
Turkeys	230	6,500	Prune	125,000	20,000	145,000
Eggs	9,856	.....	Quince	12	.....	.....
Total value		\$256,530	Total fruit..	202,200	24,200	226,400
Fruits, Vegetables, Etc.			Almond	4,500	.....	4,500
	Total Production.	Value.	Walnut	400	.....	400
	Pounds.		Total nut ..	4,900	.....	4,900
Green—			Grapevines ...	305,500	.....	140
Apples	2,200,000	\$33,000	Berries, acres.	140	.....	.....
Apricots	985,022	16,170	Forest Products.			
Blackberries	27,500	1,376		Amount.	Value.	
Beets	5,250	55	Fuel, wood (cords) ...	5,000	\$30,000	
Cabbage	21,000	1,575	Power used for mills, manufactories, and			
Cauliflower	10,500	525	pumping plants in county—Steam (num-			
Corn	105,000	2,100	ber), 13; electrical (number), 21; water			
Cherries	100,000	4,500	(number), 1; gasoline (number), 18.			
Grapes (table)	60,000	600	Miscellaneous Products.			
Loganberries	135,000	6,075		Pounds.	Value.	
Pears	1,160,000	21,750	Bees (hives), number.	590	\$590	
Peaches	720,000	9,000	Honey	17,700	1,475	
Plums	125,000	3,000	Garden seed	950,000	162,500	
Irish potatoes	1,100,000	13,750	Sugar beets (tons) ...	6,600	33,000	
Raspberries	34,100	1,705	Dressed veal	28,700	2,500	
Strawberries	1,210,000	35,350	Dressed hogs	17,500	1,400	
Tomatoes	5,000,000	42,000	Manufactories.			
Total		\$192,330		No. Employees.	Value of Products.	
Dried—	Pounds.	Value.	Cigars	1	2	\$7,000
Almonds	80,000	\$8,800	Confectionery	2	4	3,375
Apricots	140,000	126,000	Meat products—			
Onions	390,600	2,855	Hides			14,500
Peaches	120,000	6,000	Lard			5,300
Prunes	2,800,000	112,000	Meat packed			4,250
Walnuts	30,000	3,000	Tallow			1,000
Silver prunes	200,000	14,000	Planing mills	1	3	6,500
Total		\$272,655	Manufactured Output.			
Canned—	Cases.	Value.				Quantity.
Apricots	1,250	\$3,750	Cigars			190,000
Pears	410	1,722				
Tomatoes	500	900				
Total		\$6,372				

SAN BERNARDINO COUNTY.

San Bernardino is not only the largest county in California, but it is the largest in the United States. It is larger than New Hampshire, Vermont, and Rhode Island combined; larger than New Jersey, Delaware, Massachusetts, and Rhode Island combined; very nearly as large as Massachusetts, Connecticut, and New Jersey. There are eight states whose area is less than that of this county.

San Bernardino County is in the southeastern part of the State. The greater portion is desert. In the north is the Mojave Desert, and in the east the northern end of the Colorado Desert, the arable portion being confined to the southwestern part—the San Bernardino Valley. This valley forms an almost perfect amphitheater, encircled by mountains and hills, open only on the west, allowing the sea breeze from the ocean to sweep its entire length.

Mount San Gorgonio is perpetually snow-capped, and from it is derived much of the water used for irrigation in the summer in the valley below, the remainder coming from the mountain range, giving a bountiful supply for irrigators. The combined waters of the streams, springs, and artesian wells make this valley one of the best watered in southern California.

The forests on the mountain ranges furnish the supply of lumber and timber used in the valley.

Mount San Bernardino, from its distinctive cone, has been adopted by the United States surveyors as the initial point for land surveys in southern California, both base and meridian starting from its peak.

The northern and eastern parts of the county are almost absolutely sterile. Yet, along the Mojave River, where it debouches from the mountains to the desert, and for many miles, the land on both sides is fertile, easily worked, and produces abundantly as long as the water supply is available.

The soil of San Bernardino Valley varies greatly with locality. In the eastern part it is a sharp gravel or sand, with a large admixture of alluvial deposits. West the soil changes to a heavy, lark loam, with occasional patches of adobe. Still farther west, the soil is of a lighter character, and possesses much more of the soda and potash constituents. Immediately about the city of San Bernardino the soil is a strong adobe, with appearances here and there of soda salts. Along the river bottom the soil is a heavy clay, and in some places a black adobe. It is cold and damp, and not as suitable for fruit culture as for grazing and the growing of hay.

The rainfall varies a great deal, as does the climate. Passing from the lower levels to the high altitudes the rainfall increases. On the north and east of the mountain ranges, on the Mojave and Colorado deserts, the larger portion of the rainfall comes in July and August, with no rains during the winter. The rains are short, sharp, and heavy, frequently accompanied by thunder and lightning, which latter is almost unknown south of the mountains.

In the number and character of irrigation enterprises, the county stands in the front rank. It has been justly called the "Mother of Irri-

gation," because here was dug the first irrigation ditch in the State, and here were raised the first crops by irrigation. It is over a hundred years since the mission fathers of San Gabriel established an outlying post, or submission, just west of Redlands, and employed Indian labor to dig what is known as the zanja. This ancient ditch is still in use and within the same banks that were first thrown up by Indian labor almost a century ago.

There are hundreds of miles of canals and pipe lines, with thousands of miles of laterals and individual pipe lines. In addition to this, hundreds and hundreds of wells have been bored, each producing a flowing stream without other or further expense, which volume is sufficient not only to irrigate many thousands of acres, but also furnishes the magnificent supply which fructifies and renders fertile the great plain on which the city of Riverside stands.

Almost every variety of fruit can be produced in some part of this county. The only exceptions are those strictly tropical. In the mountain valleys and upon the upper plateaus, apples and cherries are grown. On the lower levels, all the deciduous fruits are produced. The production of oranges, lemons, and pomelos is large, these fruits being grown to perfection. The production of oranges has increased rapidly during the last few years. The first plantings of orange trees were two set out by Anson Van Leuven in his dooryard in Old San Bernardino in the early sixties, and by M. H. Crafts at Crafton, at about the same time or a little later.

In the western part of Rialto, Etiwanda, and Cucamonga neighborhoods there is produced a large quantity of raisins. Another section of the county especially adapted to the culture of grapes is that about Hesperia, which lies along the Mojave River.

In the southwest corner of the valley is located the Chino Ranch, on which is the third largest beet-sugar factory in the world. The acreage devoted to sugar-beet culture is in the neighborhood of 20,000. The factory has a capacity of about 12,000 tons of refined sugar annually. The culture of sugar beets has been a profitable industry for the farmers. On this ranch are fattened thousands of head of cattle upon the beet pulp, which is siloed for that purpose.

Along the slope of the mountains, and in the mountain valleys and canyons, are numerous bee ranches, from which is produced a large amount of honey.

The raising of cattle and sheep is carried on along the mountain ranges and in the upper mountain valleys. Several large bands of sheep are grazed on the ranges. Dairying is carried on in both the upper and lower valleys. Pure-bred or grades of high-class dairy cattle are in general use. A stock company for the breeding of the most desirable classes of horses has a large ranch at Victor to be devoted exclusively to their raising.

Wheat, oats, and barley are grown in considerable quantities, and alfalfa is raised with profit.

Vegetables of nearly all descriptions are raised, the yield being large, and a growing shipping trade to outside markets has been established.

The northern and eastern portions are heavily mineralized, and although prospecting has been carried on for fifty years, new and greater finds are being made every year. Almost every known mineral

has been discovered. Gold, silver, copper, iron, tin, lead, borax, soda, and nitrates are found in abundance and scattered over a wide area. Some of the richest silver mines in the State are in this county. Copper exists in great abundance. The high cost of freight; the scarcity of water, which renders the life of the prospector precarious, as well as interfering with the working of the mines; the scarcity and high cost of fuel—all combined have limited prospecting and retarded mining development. The building of railroads across the desert has partially removed some of these obstacles, and mining recently has been prosecuted with more vigor.

STATISTICS OF SAN BERNARDINO COUNTY, 1909-10.

General Statistics.	
Area 20,160 square miles, or acres.	12,902,400
Number of farms	5,085
Number of acres assessed	893,745
Value of country real estate	\$16,649,790
Of improvements thereon	\$7,680,500
Of city and town lots	\$4,198,425
Of improvements thereon	\$5,669,365
Of personal property	\$2,769,650
Total value of all property	\$26,967,730
Expended on roads, last fiscal year	\$184,105
Expended for bridges, last fiscal year	\$30,943
Number of miles of public roads	2,160
Road levy per \$100, 1910	46c
Value of county buildings	\$460,000
Irrigating ditches—miles, 440; cost	\$3,895,000
Railroads, steam—miles, 713; assessed value	\$12,999,332
Railroads, electric—miles, 53; assessed value	\$185,805
Electric power plants—2; assessed value	\$625,000
Electric power lines—miles, 206; assessed value	325,525
Number of acres irrigated	49,900

Dairy Industry.

	Production.	Value.
Butter (pounds)	180,000	\$54,000
Creameries, 2.		

Number of Fruit Trees and Vines.

	Bearing.	Non-bearing.	Total.
Apple	20,200	3,500	23,700
Apricot	26,200		26,200
Cherry	15,600		15,600
Fig	2,650		2,650
Lemon	222,200	1,500	223,720
Nectarine	2,375		2,375
Olive	54,000		54,000
Orange	3,160,200	145,000	3,295,200
Peach	8,250		8,250
Pear	18,500		18,500
Plum	2,700		2,700
Prune	2,800		2,800
Other kinds	7,500		7,500

Total fruit ..	3,543,175	150,000	3,683,175
Almond	1,500		1,500
Walnut	6,800	1,500	8,300
Total nut ...	8,300	1,500	9,800
Grapevines, acres	22,870	2,500	
Berries, acres.	100		

Fruits, Vegetables, Etc.		
	Total Production. Pounds.	Value.
Green—		
Apples	2,400,000	\$71,250
Apricots	6,512,000	52,075
Blackberries	92,500	9,375
Beans . . . . .	. . . . .	35,600
Beets . . . . .	. . . . .	28,090
Cabbage . . . . .	. . . . .	89,000
Cauliflower . . . . .	. . . . .	2,500
Corn . . . . .	. . . . .	41,500
Cherries	140,000	9,800
Figs	15,000	1,500
Grapes	98,500,000	526,600
Grape fruit (boxes)	19,800	41,580
Lemons (boxes)	225,615	753,554
Loganberries	19,800	2,050
Nectarines . . . . .	. . . . .	500
Onions	85,000	1,550
Oranges (boxes) . . . . .	. . . . .	5,023,770
Olives	450,000	15,625
Pears	1,050,000	27,900
Peaches	10,944,000	84,080
Peas . . . . .	. . . . .	26,750
Plums	180,000	4,500
Irish potatoes	2,300,000	24,500
Sweet potatoes	30,000	650
Prunes	600,000	2,400
Raspberries	17,500	1,750
Strawberries	180,000	16,200
Tomatoes	1,600,000	6,400
Miscellaneous	2,000,000	9,000

Total value \$6,910,159

	Pounds.	Value.
Dried—		
Almonds	4,500	\$650
Apricots	810,000	58,725
Figs	2,200	340
Onions	14,000	400
Peaches	640,000	24,000
Prunes	100,000	2,250
Raisins	3,200,000	90,600
Walnuts	20,000	2,600

Total value \$179,565

	Cases.	Value.
Canned—		
Apricots	31,700	66,570
Cherries	600	2,340
Pears	575	1,610
Peaches	1,067,002	13,400
Plums	680	1,190
Miscellaneous	13,000	27,400

Total value \$312,510

Wines, Brandies, Etc.

	Gallons.	Value.
Dry wines	1,030,000	\$128,000
Sweet wines	1,140,000	214,500
Brandy	192,000	61,500
Vinegar	90,000	7,500

Total value \$411,500

Number of wineries, 12.

STATISTICS OF SAN BERNARDINO COUNTY, 1909-10—Continued.

Cereal Products and Hay.				Live Stock Industry.		
Tons of 2,000 pounds.				Number.	Value.	
	Acres.	Tons.	Value.			
Barley	4,700	2,450	\$42,900	Cattle—Beef	10,800	\$594,000
Oats	100	75	2,575	Stock	14,400	288,000
Corn	2,500	1,200	35,400	Dairy Cows—Graded..	875	35,000
Total value			\$80,875	Calves	3,600	38,000
	Acres.	Tons.	Value.	Swine	8,900	97,000
Alfalfa hay	8,700	61,880	\$679,900	Horses—Thoroughbred	18	18,000
Grain hay	2,500	23,000	276,000	Standard-bred	350	37,500
Grass hay		600	3,600	Common	14,000	1,330,000
Total value			\$959,500	Colts	900	18,000
				Mules	500	75,000
				Total value		\$2,578,500
Forest Products.				Manufactories.		Value.
	Amount.	Value.				
Area of timber lands				Bookbinderies		\$4,600
(acres)	287,000			Wood boxes		205,000
Cedar (acres)	28,000			Brick		21,000
Pine (acres)	259,000			Cement		800,000
Sawmills (number) ...	3	\$50,000		Cigars		24,000
Charcoal (sacks)	3,000	1,200		Clothing		71,500
Fuel, wood (cords)	14,000	77,000		Confectionery		63,000
Lumber (feet)	12,000,000	215,000		Electrical supplies		250,000
Sash and door fac-				Flouring mills		342,000
tories (number)	2	21,000		Foundries and iron works		260,000
Total value		\$364,200		Leather goods		25,000
				Lime		150,000
Poultry and Eggs.				Machinery		606,575
	Dozen.	Value.		Meat products—		
Chickens	8,000	\$40,000		Hides		46,500
Ducks	100	600		Lard		17,200
Geese	50	500		Meat packed		10,500
Turkeys	825	13,000		Tallow		15,000
Eggs	840,000	226,800		Olive oil		95,000
Total value		\$280,900		Pickles		162,000
				Sewer pipe		28,000
Miscellaneous Products.				Planing mills		184,000
	Pounds.	Value.		Artificial stone		11,500
Bees (hives) number.	11,500	\$40,250		Granite		4,500
Beeswax	5,000	1,250		Marble		35,000
Flowers and plants				Sandstone		3,000
(acres)	195	176,000		Sugar, beet		1,485,000
Honey	450,000	27,000		Tin and galvanized iron		117,000
Alfalfa seed	8,000	1,200		Fertilizer		150,000
Syrup (gallons)		3,000		Miscellaneous		83,000
Sugar beets (tons) ...	40,000	220,000		Feed, mill		262,800
Beet pulp		42,500		Oil refinery		687,500
Alfalfa meal		40,000		Ice		615,000
Gold		175,000		Total value		\$6,836,175
Silver		20,000				
Copper		15,000		Manufactured Output.		Quantity.
Lead		10,000		Brick (thousand)		3,400
Tungsten		120,000		Cement (tons)		80,000
Crushed rock		125,000		Cigars (thousand)		440
Marble dust		1,200		Flour (barrels)		60,000
Plaster		75,000		Hides (pounds)		530,000
Paving blocks		35,000		Lard (pounds)		119,000
Salt		50,000		Meat packed (pounds)		72,500
Total value		\$1,188,700		Tallow (barrels)		800
				Olive oil (gallons)		42,000
				Pickled olives (gallons)		180,000

SAN DIEGO COUNTY.

San Diego County occupies the southern part of the State, and has an area slightly larger than Massachusetts. The Pacific Ocean washes its shores for upward of 75 miles. The land rises gently from the ocean for a distance of about fifty miles to a chain of peaks forming the backbone of the county, descending again quite rapidly to the Colorado River Valley, the greater part of which is below sea level.

The arable portion of the western slope is divided into a series of irregular terraces or plateaus. The lower or coast terrace comprises a number of valleys with the intervening mesa. This large acreage is practically frostless. Next comes a series of higher valleys, Poway Valley, varying in elevation from 400 to 500 feet. The third terrace, the altitude of which ranges from 1,000 to 2,500 feet, comprises the foothill region, with numerous smaller intervening valleys, nooks and glens. Next comes the mountain region. The area of tillable land in these valleys and mesas is approximately 600,000 acres, a still larger area being suited to pasturage and grazing. The elevation of the mountain valleys varies from 2,500 to 4,500 feet. They are chiefly devoted to stock raising, but many of them are well adapted to the growing of small fruits and vegetables and to diversified farming.

The arable soil of the county may be classed under two heads; granitic and adobe; though there is often a mixture of both, resembling adobe.

The intermountain region, the hills and valleys between the plains of Imperial and the western slope of the county, is rich in minerals, and affords excellent pasturage for several thousand cattle. The mineral wealth of San Diego County, though known to be great, is largely undeveloped, and offers an excellent field for the prospector and capitalist. Lepidolite and amblygonite, containing lithia and other valuable products, exist in greater quantities than in any other known deposit in the world. San Diego is producing the finest tourmaline in the United States. The crystals are of exceptional hardness, possess exquisite delicacy of coloring, and when cut form gem-stones of great brilliancy. Kunzite, a new gem, not found in any other part of the world, was recently discovered at Pala, and is attracting a great deal of attention. Gem experts are manifesting a deep interest in the remarkable crystallizations found in San Diego County.

According to a bulletin on the "Climatology of California," recently published by the U. S. Department of Agriculture, San Diego County has the heaviest and most reliable rainfall of any part of southern California. The rainfall increases, and greater extremes of temperature occur, as you leave the coast, the higher mountain peaks being often covered with snow to quite a depth during a part of the winter.

Water is impounded mainly for the citrus orchards of the coast section, the higher valleys requiring but little or no irrigation for their crops of cereals, deciduous fruits, olives, vegetables, etc.

As an evidence that education keeps pace with the population, there are more than one hundred and fifty schoolhouses distributed through the county, the instruction in which is up to the usual high standard found throughout California.

The board of supervisors has done and is doing good work in the way of road building, the most distant and mountainous places being readily reached over excellent highways.

The orange, lemon, and pomelo, or grape fruit, do well. The largest single lemon grove contains about 800 acres.

Raisin grapes are a profitable crop, and the industry has a bright future. The wine industry is large and growing.

Olive growers are making money. An olive grove, to be a commercial success, should be set out with a view to supplying pickling fruit, oil olives being treated as a by-product. The demand for pickled ripe olives is already in excess of the supply, and steadily growing.

Peaches, apricots, pears, quinces, plums, cherries, and other deciduous fruits do well. The mountain region around Julian has attained a special reputation for the crisp, finely flavored apples.

A good walnut orchard, properly located with reference to soil and water, is a safe investment. Small areas well suited to this crop may be found in different parts of the county—notably in the Tia Juana Valley. Almonds do well, and there are some thriving orchards.

San Diego County is celebrated for its deliciously perfumed and fine-flavored honey, which always finds a ready market at top prices. The apiaries are located for the most part among the hills and valleys back from the coast.

There is reason to believe that the cultivation of the silkworm may hold a most important part in the industrial development of San Diego County—the climatic conditions are so perfectly adapted to the delicate constitution of the worm, and the foliage of the mulberry may be had in such wholesome condition practically during the entire year. Many acres have been set out to mulberry trees, and those interested feel greatly encouraged over the outlook.

The dairy industry has shown a healthy growth, having trebled in the past four years.

The modern city of San Diego was founded by A. E. Horton in 1867. The situation is not only sanitary and attractive, but it is also admirably adapted for a large ocean commerce. Numerous wharves extend into deep water, and in their neighborhood may be found lumber yards, planing mills, warehouses, foundries, etc. The electric street railway system is equipped with modern cars and complete in every respect. Water is provided in abundance, the supply and distribution being controlled by the municipality. The streets of the city are well lighted by electricity. The schools, private and public, have an excellent reputation. A fine, large opera house, perfect in its appointments, is on the circuit of the very best theatrical and operatic companies. There are also several smaller theaters. The different religious organizations worship in attractive edifices; secret societies and benevolent associations have their lodge rooms, and numerous musical and literary clubs are supported by an active membership. There are several strong banking institutions. The hotel accommodations are excellent, and there are a number of sunny modern lodging houses. San Diego is thrown into special prominence as being the first port of call on the Pacific coast of the United States north of Panama, and the magnificent bay, around the shores of which the city is built, will soon become an important naval rendezvous. The Government has concluded arrangements for the erection of a large coaling station here, and is fast completing the

building of a modern military post at Fort Rosecrans, the big guns of which command the entrance to the bay.

Just across the bay from San Diego, ten minutes by ferry, is the peninsular city of Coronado, with its world-famous Hotel del Coronado and many beautiful homes.

National City, the second largest city, is situated on the southeast shore of the bay. The land here rises gently from the water front, and is admirably suited for the location of manufacturing establishments or other plants requiring a comparatively large area of level ground with good water frontage. There are a number of attractive homes within the city limits and nestling among the lemon and orange groves in the fertile valleys near by. The church and school facilities of the place are excellent. A large manufactory of citrus products is in successful operation, turning out citric acid, oil of lemon, lemon extracts, etc. There is also an olive oil factory, and its product is equal to the best.

Passing through Old Town, you come to Pacific Beach, a very attractive suburb of San Diego. The land is quite level near the ocean, affording one of the widest, smoothest, hardest, and most attractive beaches along the coast.

Escondido is some 35 miles northeast of San Diego, being connected by a spur with the main line of the Southern California Railway. A large area of productive country is tributary to Escondido, from which are made shipments of hay, grain, cattle, hogs, oranges, lemons, raisins, wine, honey, chickens, eggs, butter, etc. The school and church accommodations of the place are excellent.

STATISTICS OF SAN DIEGO COUNTY, 1909-10.

General Statistics.

Area 4,209 square miles, or 2,693,760 acres.	
Number of acres assessed	1,297,842
Value of country real estate	\$5,681,656
Of improvements thereon	\$987,774
Of city and town lots	\$35,053,526
Of improvements thereon	\$4,918,252
Of personal property	\$5,358,624
Total value of all property	\$51,999,732
Expended on roads, last fiscal year	\$55,267
Expended for bridges, last fiscal year	\$13,561
Number of miles of public roads	5,200
Road levy per \$100, 1910	50c
Value of county buildings	\$627,000
Irrigating ditches—miles, 133; cost	\$3,420,090
Railroads, steam—miles, 205.14; assessed value	\$2,224,044
Railroads, electric—miles, 56.1; assessed value	\$168,330
Electric power plants—4; assessed value	\$58,900
Electric power lines—miles, 2; assessed value	\$55,200
Number of acres irrigated	14,775

Cereal Products and Hay.

	Tons of 2,000 pounds.		
	Acres.	Bushels.	Value.
Wheat	6,430	2,100	\$63,000
Barley	30,750	15,750	291,375
Oats	7,500	1,200	32,400
Corn	2,200	1,104	27,600
Total cereals..	46,880	20,154	\$414,275
Alfalfa hay	1,720	7,500	\$90,000
Grain hay	88,975	105,000	1,260,090
Grass hay	3,600	4,800	38,400
Total hay	94,295	117,300	\$1,388,403

Dairy Industry.

	No. Production.	Value.
Skimming stations	4	710,000
Butter (pounds)...	471,000	157,000
Cream (gallons) ...	10,000	10,900
Total value		\$415,500
Dairies, 250; creameries, 3.		

Poultry and Eggs.

	Dozen.	Value.
Chickens	29,540	\$205,780
Ducks	1,500	9,750
Geese	500	9,000
Turkeys	1,200	32,400
Eggs	1,205,300	361,680
Total value		\$618,610

Number of Fruit Trees and Vines.

	Bearing.	Non-bearing.	Total.
Apple	65,860	25,850	91,710
Apricot	49,110	2,200	51,310
Cherry	5,745	725	6,470
Fig	15,700	2,100	17,800
Lemon	301,000	31,600	305,600
Olive	231,600	24,000	255,600
Orange	107,000	4,200	111,200
Peach	95,200	39,100	133,300
Pear	17,850	10,000	27,850
Plum	11,750	9,000	20,750
Prune	87,360	4,000	91,360
Pomelo	17,000	2,350	19,350
Total fruit..	1,005,175	155,125	1,132,300
Almond	8,380	1,000	9,380
Walnut	7,000	2,700	9,700
Total nut ...	15,380	3,700	19,080
Grapevines ...	2,288,000	549,500	2,837,500
Berries, acres.	185	10	195

STATISTICS OF SAN DIEGO COUNTY, 1909-10—Continued.

Fruits, Vegetables, Etc.

	Total Production. Pounds.	Value.
Green—		
Apples	2,500,000	\$62,500
Apricots	1,600,000	48,000
Blackberries	300,000	12,000
Beans	3,340,000	116,900
Cabbage	500,000	5,000
Celery	20,000	300
Cauliflower	160,000	6,400
Corn	2,000,000	30,000
Cherries	200,000	10,000
Figs	16,000	480
Grapes	3,000,000	30,000
Grape fruit	600,000	9,000
Lemons (boxes)*	460,272	1,495,884
Loganberries	10,000	400
Onions	250,000	3,125
Oranges (boxes)†	52,083	32,857
Olives	3,700,000	157,250
Pears	103,250	3,097
Peaches	1,000,000	20,000
Peas	310,000	15,500
Persimmons	20,000	800
Plums	100,000	3,000
Irish potatoes	6,018,000	75,225
Sweet potatoes	300,000	4,500
Prunes	200,000	4,000
Quinces	2,000	60
Strawberries	2,000,000	80,000
Tomatoes	550,000	5,500
Rhubarb	18,000	540
Totals	29,329,610	\$2,233,318

	Pounds.	Value.
Dried—		
Almonds	60,000	\$7,800
Apricots	220,000	17,600
Beans†	1,650,000	82,500
Onions	450,000	4,500
Peaches	30,000	1,500
Prunes	30,000	1,200
Raisins‡	3,520,000	105,600
Walnuts	100,000	12,500
Totals	6,060,000	\$233,200

	Gallons.	Value.
Canned—		
Olives	146,600	\$131,940

Live Stock Industry.

	Number.	Value.
Cattle—Beef	12,000	\$600,000
Stock	40,300	1,200,000
Dairy Cows—Graded	1,200	60,000
Thoroughbred—		
Angus	100	10,000
Ayrshire (com- mon)	12,000	420,000
Devon	230	11,500
Herefords	15	750
Jersey	250	12,500
Calves	14,000	140,000
Swine	13,500	135,000
Horses—Thoroughbred	100	20,000
Standard-bred	2,000	250,000
Common	8,600	516,000
Colts	2,000	50,000
Mules	40	3,200
Jacks and Jennies	1,400	189,000
Sheep	10,300	77,000
Lambs	4,200	12,600
Common goats	600	1,500
Total stock	122,835	\$3,718,050
Wool (pounds)	100,000	25,000
Mohair (pounds)	125,000	12,500

Manufactories.

	No. Employees.	Value of Products.
Boat builders	3	8
Bookbinderies	3	15
Paper boxes	1	2
Wood boxes	1	6
Brick	3	75
Brooms	1	5
Blue prints	1	5
Carriages and wagons	2	13
Cigars and smoking tobacco	3	90
Cider and vinegar	1	4
Coffee, spices, etc.	2	20
Confectionery	6	55
Concrete piles	1	10
Chemicals	2	10
Electrical supplies	7	29
Flouring mills	1	16
Foundries and iron works	8	192
Furniture	1	6
Gas and electricity	1	20
Jewelry	5	23
Leather goods	2	9
Feathers	2	24
Jams and jellies	1	5
Curios	2	9
Engraving	1	7
Acetylene gas engine	2	3
Ice	2	23
Meat products—		
Hides	5	21
Lard .....	.....	.....
Meat packed	15	40,000
Tallow .....	.....	33,000
Olive canneries .....	.....	130,900
Olive oil	4	40
Showcases	3	34
Pickles	1	4
Cement	1	22
Planing mills	7	171
Salt	2	70
Soap	1	17
Artificial stone	2	30
Crushed rock	3	63
Granite	3	24
Mattresses	2	21
Precious gems	8	20
Rough gems	5	20
Peanut butter and Saratoga chips	2	12
Trunks	2	7
Ranges	2	12
Auto tops	1	6
Tin and galvanized iron	5	50
Citrus washing pow- der	1	17
Sal soda .....	.....	1,825
Sawmills	1	100
Onyx	1	25
Rubber stamps	1	2
Fuel	1	12
Tents and awnings	2	15
Total value		\$4,516,091
Manufactured Output.		Quantity.
Brick (thousand)		13,333
Brooms (dozen)		2,500
Cigars		2,770,000
Flour (barrels)		43,750
Hides (pounds)		640,000
Lard (pounds)		80,000
Meat packed (pounds)		350,000
Tallow (barrels)		1,600
Olive oil (gallons)		12,500
Olives (gallons)		146,600
Pickles (gallons)		2,000
Salt (tons)		12,000
Soap (pounds)		230,000
Smoking tobacco		10,000
Citrus washing powder		720,000
Sal soda		180,000
Lumber cut per day (feet)		65,000

* 1,472 cars.

† 168 cars.

‡ 55 cars.

§ 65 cars.

STATISTICS OF SAN DIEGO COUNTY, 1909-10—Continued.

Wines, Brandies, Etc.			Forest Products.		
	Gallons.	Value.		Amount.	Value.
Dry wines	525,000	\$175,000	Area of timber lands		
Sweet wines	185,350	92,675	(acres)	43,260	\$540,750
Beer (barrels)	52,324	418,592	Cedar (acres)	2,000	
Brandy	7,000	5,250	Pine (acres)	17,200	
Vinegar	1,800	1,170	Oak (acres)	23,060	
			Fir (acres)	1,000	
Totals	771,474	\$692,687	Fuel, wood (cords) ...	2,500	15,000
Number of wineries, 5; number of distilleries, 4; number of breweries, 1.			Eucalyptus	5,000	100,000
			Total value		\$655,750
			Power used for mills and manufactories in county—Steam (number), 178; electrical (number), 350; gasoline (number), 100.		
Fish Industry.			Miscellaneous Products.		
	Pounds.	Value.		Pounds.	Value.
All kinds (fresh)	3,274,414	\$163,720	Bees (hives), number.	55,000	\$165,000
Salt dried	1,066,000	42,240	Beeswax	26,000	6,000
Pickled	246,400	10,736	Flowers and plants ...	.....	75,000
Lobsters	40,000	8,000	Honey (strained and comb)	1,597,500	87,862
Turtles	11,000	550	Mineral water (cases)	9,000	66,420
Totals	4,627,814	\$225,246			

SAN FRANCISCO COUNTY.

San Francisco is essentially a commercial and manufacturing city. It produces no agricultural products, except to a small extent the minor vegetables. Its location on the bay of San Francisco, one of the finest and safest harbors in the world, eminently fits it for a commercial city, and its importance in this respect insures it a place among the chief shipping centers of the world.

Within the past two years the city has expended \$12,000,000 for public improvements which include municipal buildings, streets, sewers, high pressure water system for fire protection, garbage incinerators, hospitals, etc. Its revenues are about \$11,000,000 annually.

Area 42.19 square miles; value of city and town lots, \$288,095,453; of improvements thereon, \$145,167,790; of personal property, \$81,763,921; total value of all property, \$515,027,164; railroads, steam, assessed value, \$392,925.

SAN JOAQUIN COUNTY.

San Joaquin County lies directly east of San Francisco and San Pablo bays and spans the great interior valley of California from the foothills of the Coast Range to the foothills of the Sierra Nevada Mountains. It thus commands the entrance to the chief port and metropolis of the coast from the continent, and for both water and land traffic; hence it is termed the "Gateway County." It embraces most of the famous San Joaquin delta within its limits. The soil varies in character, but the surface is mostly level and well adapted to intensive agriculture. The climate of this area is tempered by sea influences, by the air which rushes through the gap in the Coast Range. The products are wonderfully diversified, and from its rank, ten years ago, as the leading grain county in the West, it has progressed to a system of mixed and special agriculture and is now distinguished as a producer of hay, barley, potatoes, grapes, garden vegetables, orchard fruits, beans, onions, asparagus, celery, dairy products, and poultry.

The county has 400 lineal miles of navigable waterway, four trans-continental railroads, about 40 miles of interurban electric line, with other lines under construction, is improving 240 miles of permanent highways at a cost of \$2,000,000. Its transportation facilities are consequently unexcelled. Stockton, its county seat, is a city of 25,000 people, a commercial and manufacturing center, and the distributing point for the San Joaquin Valley. Within the past ten years the number of farmers in the county has increased from less than 2,000 to over 5,500, and the number of farms under 100 acres each in extent has increased from 700 to 3,500; a striking evidence of the transition from the pastoral and grain raising conditions to intensified agriculture. San Joaquin County has \$747,000 invested in county buildings which are models in their class. About \$10,000,000 has been expended in the county during the past two years for railroads and other large enterprises. Agriculture and manufacturing are prosperous.

STATISTICS OF SAN JOAQUIN COUNTY, 1909-10.

General Statistics.		General Statistics—Continued.	
Area 1,365 square miles, or 873,600 acres.		Railroads, electric — miles, 53;	
Number of farms	5,520	assessed value	\$284,325
Number of acres assessed	870,400	Electric power plants — 2; as-	
Value of country real estate....	\$17,133,725	essed value	\$23,038
Of improvements thereon	\$3,102,046	Electric power lines—miles,	
Of city and town lots	\$7,735,615	77.75; assessed value	\$51,077
Of improvements thereon	\$7,438,553	Number of acres irrigated	275,000
Of personal property	\$6,079,203		
Total value of all property	\$41,489,142		
Expended on roads, last fiscal		Dairy Industry.	
year	\$458,130		
Expended for bridges, last fis-		Production.	
cal year	\$125,246		
Number of miles of public roads	1,200	Butter (pounds)	2,450,000
Road levy per \$100, 1910.....	37.3c	Cheese	3,000
Value of county buildings	\$747,000	Milk sold and con-	
Irrigating ditches (cost)	\$1,750,000	densed	380,000
Railroads, steam — miles, 238;			
assessed value	\$5,103,869	Total value	\$1,020,000
		Creameries, 2; skimming stations, 40;	
		cheese factories, 2.	

STATISTICS OF SAN JOAQUIN COUNTY, 1909-10—Continued.

Fruits, Vegetables, Etc.			Live Stock Industry.		
	Value.		Number.	Value.	
Green—					
Apples	\$9,500		Cattle—Beef	7,900	\$197,500
Apricots	41,830		Stock	25,840	568,040
Asparagus	780,000		Dairy Cows—Graded..	14,180	567,200
Blackberries	17,045		Thoroughbred	200	20,000
Beans	325,000		Calves	7,120	56,960
Beets	10,000		Swine	45,200	361,600
Cabbage	26,400		Horses		
Celery	22,000		Standard-bred	15,800	1,975,000
Cauliflower	15,500		Common	6,200	465,000
Corn	18,200		Colts	3,500	105,000
Cherries	240,500		Mules	5,800	707,600
Figs	6,200		Sheep	49,200	162,360
Gooseberries	5,000		Lambs	4,600	4,600
Grapes	1,441,000		Angora and common		
Lemons (boxes)	2,200		goats	350	700
Loganberries	4,800				
Nectarines	1,300		Total value		\$5,191,560
Onions	438,000		Wool (pounds)	170,000	30,000
Oranges (boxes)	12,000				
Olive	50,700				
Pears	35,300				
Peaches	235,100				
Peas	29,500				
Plums	19,200				
Irish potatoes	2,145,000				
Sweet potatoes	6,200				
Prunes	81,900				
Quinces	3,500				
Raspberries	2,500				
Strawberries	17,000				
Tomatoes	30,000				
Melons	75,000				
Other vegetables	80,000				
Dried—					
Almonds	\$152,000				
Apricots	30,000				
Figs	71,000				
Peaches	4,500				
Peanuts	61,000				
Walnuts	8,000				
Total value	\$331,500				
Canned—					
Grapes	6,000				
Pears	900				
Peaches	120,000				
Plums	5,000				
Tomatoes	10,000				
Asparagus	358,000				
Total value	\$895,600				
Number of Fruit Trees and Vines.					
	Bearing.	Non-bearing.	Total.		
Apple	14,250	1,000	75,220		
Apricot	70,000	4,000	74,000		
Cherry	39,300	10,200	49,500		
Fig	8,100	400	8,500		
Lemon			2,200		
Nectarine	1,700	1,200	2,900		
Olive	50,750	5,500	56,250		
Orange	10,100	3,900	14,000		
Peach	235,150	20,000	255,150		
Pear	28,000	4,000	32,000		
Plum	25,000	5,000	30,000		
Prune	54,600	8,815	63,415		
Quince			3,750		
Total fruit..	536,950	64,015	606,915		
Almond	127,200	4,000	131,200		
Chestnut	160		160		
Pecan	225	146	371		
Walnut	8,500	19,000	27,500		
Total nut ...	136,085	23,146	159,231		
Grapevines, acres	25,040	13,750	38,790		
Berries, acres			575		

Live Stock Industry.			Wines, Brandies, Etc.		
	Number.	Value.		Gallons.	Value.
Cattle—Beef	7,900	\$197,500	Dry wines	900,000	\$90,000
Stock	25,840	568,040	Sweet wines	4,650,000	930,000
Dairy Cows—Graded..	14,180	567,200	Beer (barrels)	1,500,000	375,000
Thoroughbred	200	20,000	Brandy	100,000	40,000
Calves	7,120	56,960	Vinegar		5,000
Swine	45,200	361,600	Grape syrup	15,000	18,750
Horses					
Standard-bred	15,800	1,975,000			
Common	6,200	465,000			
Colts	3,500	105,000			
Mules	5,800	707,600			
Sheep	49,200	162,360			
Lambs	4,600	4,600			
Angora and common					
goats	350	700			
Total value		\$5,191,560			
Wool (pounds)	170,000	30,000			

Wineries, 110—6 large, 104 small; distilleries 6; breweries 2.

Manufactories.			Wines, Brandies, Etc.		
	No.	Number of Employees.	Value of Products.		
Art goods	3	16			
Bookbinderies and printers	6	151			
Canvas articles	2	151			
Brick	4				
Brooms	1	305			
Carriages and wagons	8	4			
Cement	5	73			
Cigars	3	175			
Clothing	14	65			
Miscellaneous	14	185			
Confectionery		185			
Gas engines	5	29			
Crackers		210			
Electrical supplies ..	2	28			
Flouring mills	4	200			
Foundries and iron works	6	282			
Furniture	5	29			
Jewelry	5	18			
Leather goods	4	27			
Miscellaneous	4	29			
Machinery	9	402			
Miscellaneous	4	25			
Meat products	6	110			
Olive oil	6	55			
Pickled olives	2	8			
Miscellaneous	4	16			
Planing mills	11	210			
Salt	1	14			
Soap	1	10			
Artificial stone	3	64			
Granite and marble..	2	9			\$25,630
Tanneries	1	82			466,000
Tin and galvanized iron	2	12			14,500
Wire	2	31			38,400
Miscellaneous	3	36			50,800
Beverages	118	275			1,458,750
Creameries	4	43			640,000
Canneries	3	450			895,600
Totals	288	3,831			\$1,284,130

STATISTICS OF SAN JOAQUIN COUNTY, 1909-10—Continued.

Cereal Products and Hay.

	Tons of 2,000 pounds.		Value.
	Acres.	Bushels.	
Wheat	11,500	224,000	\$189,980
Barley	243,600	4,884,800	2,395,482
Oats	34,560	1,036,800	518,400
Rye	7,500	86,250	77,625
Corn	2,600	.....	68,000

Total cereals. 299,760 \$3,249,487

	Acres.	Tons.	Value.
Alfalfa hay	18,400	82,800	\$579,600
Grain hay	140,000	210,000	1,680,000
Grass hay .....	.....	.....	21,000

Total hay 158,400 \$2,280,600

Forest Products.

	Amount.	Value.
Fuel, wood (cords) ...	12,000	\$72,000

Power used for mills and manufactories in county—Steam (number), 24; electrical (number), 78; natural gas (number), 11; gasoline (number), 18.

Poultry and Eggs.

	Dozens.	Value.
Chickens	35,000	\$210,000
Ducks	310	3,100
Geese	200	3,000
Turkeys	1,640	32,800
Eggs	3,200,000	800,000

Total value \$1,048,900

Fish Industry.

	Value.
All kinds	\$35,000

Miscellaneous Products.

	Pounds.	Value.
Bees (hives), number.	495	\$5,600
Beeswax .....	.....	160
Chicory (tons)	1,600	16,000
Flax (acres)	500	3,000
Flowers and plants (acres)	8	8,000
Hemp	400	7,500

Total value \$40,260

SAN MATEO COUNTY.

San Mateo County is that part of the San Francisco peninsula lying between San Francisco County on the north and Santa Clara and Santa Cruz counties on the south. This county is divided lengthwise by the Santa Morena ridge of mountains, forming the backbone of the peninsula. The mountain ridge is the fertile and picturesque watershed of a region peculiarly adapted for homes of beauty and comfort on its eastern slope. Along the bay shore are many miles of deep water, and spur tracks to this deep water are now under construction, thereby opening up vast possibilities to manufacturers who desire cheap sites with excellent shipping facilities. The Dumbarton bridge over San Francisco Bay has been completed within the year, and trains are now running from points in this State and the East directly to San Francisco without ferrying across San Francisco Bay.

On the west the descent to the Pacific is quick and abrupt into a region occupied by prosperous farmers, dairymen, stock raisers, and lumbermen. The whole ridge is everywhere accessible, full of springs, and all more or less covered with oak and redwood.

The United States census returns show that the increase in population from 1900 to 1910 was 119 per cent, there being but three counties in the State with a greater percentage of increase in population in the same period. Convenience of travel, climatic and scenic surroundings, educational advantages, shipping facilities, proximity to the metropolis of the Pacific coast are all favorable conditions working toward the prosperity of this county.

STATISTICS OF SAN MATEO COUNTY, 1909-10.

General Statistics.				Fruits, Vegetables, Etc.		
Area 477 square miles, or 305,280 acres.					Total	
Number of farms	563				Production.	Value.
Number of acres assessed	297,000				Pounds.	
Value of country real estate	\$10,875,500			Green—		
Of improvements thereon	\$4,454,310			Apples	315,000	\$60,000
Of city and town lots	\$6,537,620			Apricots	10,000	5,000
Of improvements thereon	\$2,684,790			Blackberries	1,500	120
Of personal property	\$2,200,800			Beans	300,000	17,000
Total value of all property	\$26,733,020			Beets	250,000	1,200
Expended on roads, last fiscal year	\$87,040			Cabbage	18,000,000	180,000
Expended for bridges, last fiscal year	\$21,238			Celery	170,000	13,500
Number of miles of public roads	470			Cauliflower	5,500,000	55,000
Road levy per \$100, 1910	50c			Corn	60,000	1,200
Value of county buildings	\$273,000			Onions	225,000	4,100
Railroads, steam—miles, 46; assessed value	\$620,340			Pears	7,000	190
Number of Fruit Trees and Vines.				Peaches	3,700	150
	Bearing.	Non-bearing.	Total.	Peas	200,000	12,000
Apple	30,000	6,000	36,000	Irish potatoes	4,000,000	40,000
Apricot	3,000	.....	3,000	Strawberries (chests) ..	230	1,840
Olive	8,000	2,500	10,500	Tomatoes	150,000	1,500
Orange	200	.....	200	Artichokes	1,500,000	19,000
Peach	350	.....	350			
Pear	650	.....	650	Totals	30,692,430	\$401,800
Plum	150	.....	150	Dried—	Pounds.	
Prune	13,000	1,500	14,500	Beans	1,000,000	
				Onions	90,000	
Total fruit..	55,850	10,000	65,850	Prunes	225,000	
Almond	500	.....	500	Total	1,315,000	
Pecan	1,000	.....	1,000	Dairy Industry.		
Other nuts	1,500	.....	1,500		Production.	Value.
Grapevines ..	179,000	9,000	188,000	Skimming stations ...	502,700	\$143,000
Berries, acres.	200	.....	200	Butter (pounds)	717,200	107,000
				Milk (gallons)	1,500,000	300,000
				Cream (gallons)	10,000	6,000
				Creameries, 2.		

STATISTICS OF SAN MATEO COUNTY, 1909-10—Continued.

Cereal Products and Hay.

	Tons of 2,000 pounds.		Value.
	Acres.	Tons.	
Wheat	1,064	453	\$15,438
Barley	1,000	700	20,000
Oats	16,000	10,000	270,000
Corn	40	20	640
Total cereals..	18,104		\$306,078
Grain hay	7,500	20,000	\$245,000

Live Stock Industry.

	Number.		Value.
Cattle—Beef	1,200		\$36,000
Stock	3,400		85,000
Dairy Cows—Graded..	12,798		319,950
Thoroughbred—			
Jersey	300		12,000
Shorthorns	300		12,000
Calves	5,000		25,000
Swine	6,000		36,000
Horses—Common	2,500		125,000
Celts	250		5,000
Mules	50		3,000
Sheep	3,000		15,000
Lambs	500		1,000
Common goats	150		750
Total stock	35,448		\$675,700
Wool (pounds)		12,000	2,400

Forest Products.

	Amount.		Value.
Area of timber lands (acres)	25,000		\$1,250,000
Redwood (acres)	25,000		1,250,000
Sawmills (number)	5		75,000
Fuel, wood (cords)	2,750		16,500
Lumber (feet)	15,000,000		300,000
Shingles (thousand) ..	7,000		14,000
Total value			\$2,905,500

Wines, Brandies, Etc.

	Gallons.	Value.
Dry wines	40,000	\$3,000

Poultry and Eggs.

	Dosen.	Value.
Chickens	6,000	\$30,000
Ducks	150	875
Geese	50	800
Turkeys	80	1,120
Eggs	200,000	3,500

Total value \$35,895

Miscellaneous Products.

	Pounds.	Value.
Flowers and plants (acres)	500	\$500,000
Onion seed	100,000	25,000

Manufactories.

	No.	Number of Employees.	Value of Products.
Wood boxes	1	8	\$6,000
Cigars	2	7	12,000
Foundries and iron works	2	270	2,000,000
Meat products	1	500	.....
Hides			250,000
Lard			450,000
Meat packed			250,000
Tallow			160,000
Olive oil			200
Planing mills	13	120	3,000,000
Potteries	1	150	1,750,050
Salt	3	70	175,000
Tanneries	2	320	1,600,000
Fuse works	1	50	200,000
Paint works	1	200	.....

Manufactured Output.

	Quantity.
Brick (thousand)	2,500
Cigars (thousand)	50
Hides (pounds)	1,000,000
Lard (pounds)	6,000,000
Meat packed (pounds)	4,000,000
Tallow (barrels)	8,000
Olive oil (gallons)	200
Salt (tons)	4,000

SANTA BARBARA COUNTY.

Santa Barbara County is situated in the parallelogram formed by the trend in the California coast line made by Point Concepcion, the great continental headland. Its coast line is thus of considerable extent, being in fact about 100 miles in length. A chain of mountains, the Santa Ynez range, divides the county into two grand divisions. The southern division is the most populous, and contains Santa Barbara, the county seat, which has a population of about 12,000. The surrounding country is agricultural, being devoted to the culture of walnuts, olives, lemons, and beans in large quantities.

The northern part contains four large valleys. Lompoc Valley is a very prosperous and fertile agricultural section, Santa Ynez Valley is largely devoted to the raising of grain, as is the Los Alamos Valley. The Santa Maria Valley is the largest in southern California. Here is located the Union Sugar Company's factory at Betteravia. The hills on the southern side of this valley are the center of oil activity. Barley, beans, oats, and poultry form sources of large revenue to the inhabitants.

Santa Barbara has the best harbor in the county. There are large areas yet uncultivated, and the county is ripe for immigration. Movements to bring colonies here are under way. There is considerable activity in building, and Santa Barbara County is enjoying its full meed of prosperity.

STATISTICS OF SANTA BARBARA COUNTY, 1909-10.

General Statistics.				Number of Fruit Trees and Vines.			
				Bearing.			Non-bearing.
							Total.
Area 2,630 square miles, or 1,810,665 acres.				Apple	20,500	1,500	22,000
Number of farms	1,460			Apricot	21,450	1,200	22,650
Number of acres assessed	1,067,162			Cherry	700		700
Value of country real estate	\$11,356,740			Fig	100		100
Of improvements thereon	\$1,768,655			Lemon	110,000	25,600	135,600
Of city and town lots	\$4,483,475			Nectarine	250		250
Of improvements thereon	\$4,321,505			Olive	25,600	8,750	34,350
Of personal property	\$5,927,712			Orange	700		950
Total value of all property	\$27,858,077			Peach	6,325	1,300	7,625
Expended on roads, last fiscal year	\$156,642			Pear	1,250	300	1,550
Expended for bridges, last fiscal year	\$81,049			Plum	100	50	150
Number of miles of public roads (estimated)	1,000			Prune	1,250	200	1,450
Road levy per \$100, 1910	35c			Quince	100		100
Value of county buildings	\$200,000			Other kinds	500	100	600
Railroads, steam—miles, 174.85; assessed value	\$3,283,315			Total fruit..	188,825	39,250	228,075
Railroads, electric—miles, 14; assessed value	\$28,000			Almond	100		100
Electric power plants—3; assessed value	\$316,500			Walnut	35,750	22,500	58,250
				Total nut ..	35,850	22,500	58,350
				Berries, acres			75
Cereal Products and Hay.				Wines, Brandies, Etc.			
Tons of 2,000 pounds.				Gallons.			Value.
Acres.	Bushels.	Value.					
Wheat	2,000	20,000	\$15,000	Sweet wines			\$15,000
Barley	35,000	1,155,000	475,000				
Oats	10,000	360,000	135,000	Fish Industry.			
Corn	1,015	40,000	15,000	Pounds.			Value.
Total cereals.	1,575,000	\$640,000		All kinds	1,900,000		\$152,000
Acres.	Tons.	Value.		Dairy Industry.			
Alfalfa hay	100	300	\$4,000	No. Production.			Value.
Grain hay	35,500	45,000	500,000	Skimming stations	2		\$77,500
Total hay	35,600	45,300	\$504,000	Butter (pounds)...	400,000		128,000
				Creameries, 2.			

STATISTICS OF SANTA BARBARA COUNTY, 1909-10—Continued.

Fruits, Vegetables, Etc.

	Total Production. Pounds.	Value.
Green—		
Apples	650,000	\$7,000
Asparagus	40,000	2,800
Blackberries	75,000	2,700
Beets (tons)	85,000	1,500,000
Cherries	50,000	3,000
Figs	20,000	1,200
Grapes	100,000	1,000
Grape fruit (boxes)...	500	500
Lemons (boxes)	60,000	150,000
Loganberries	100,000	3,000
Nectarines	20,000	500
Onions	4,500,000	45,000
Oranges (boxes)	800	1,500
Olives	600,000	16,500
Pears	400,000	9,000
Peaches	100,000	2,000
Peas	300,000	12,000
Persimmons	300,000	12,000
Irish potatoes	3,300,000	44,550
Sweet potatoes	40,000	1,000
Prunes	100,000	250
Raspberries	16,000	1,000
Strawberries	175,000	7,000
Rhubarb	2,000	500
Miscellaneous	100,000	5,000

Total value \$1,829,000

	Pounds.	Value.
Dried—		
Apricots	136,000	\$12,240
Beans	35,000,000	1,295,000
Walnuts	1,940,000	280,500
Totals	37,076,000	\$1,587,740

Poultry and Eggs.

	Dosen.	Value.
Chickens	9,000	\$31,500
Ducks	100	500
Geese	25	150
Turkeys	50	600
Eggs	300,000	112,000
Total value		\$144,750

Miscellaneous Products.

	Pounds.	Value.
Bees (hives), number.	1,000	\$10,000
Flowers and plants (acres)	70	100,000
Honey	200,000	10,000
Sugar beets (tons) ..	85,000	1,500,000
Silk (raw)	8,000,000	6,500,000
Sweet peas	150,000	10,500

Live Stock Industry.

	Number.	Value.
Cattle—Beef	1,500	\$75,000
Stock	25,705	850,000
Dairy Cows—Graded..	7,600	300,000
Thoroughbred—		
Ayrshire	50	3,750
Holsteins	15	1,000
Jersey	300	10,000
Calves	2,650	25,000
Swine	7,200	40,000
Horses—		
Standard-bred	40	10,000
Common	6,350	625,000
Total stock	119,525	\$2,241,750
Wool (pounds)	165,000	21,450

Forest Products.

	Amount.	Value.
Pine (acres)	2,500	
Paper pulp (pounds)..	75,000,000	\$600,000
Power used for mills and manufactories in county—Steam (number), 40; electrical (number), 5.		

Manufactories.

	No. Employees.	Value of Products.
Bookbinderies	1 3	\$3,000
Brick	3 12	13,600
Carriages and wagons	5 20	6,000
Cigars	2 5	8,000
Confectionery	5 14	55,000
Foundries and iron works	1 6	15,000
Leather goods	6 10	10,000
Lime	1 10	50,000
Meat products	10 60	
Hides		18,900
Lard		25,000
Meat packed		5,000
Tallow		7,500
Olive oil	1 20	19,250
Iron pipe	1 3	1,000
Planing mills	3 30	120,000
Artificial stone	1 5	6,500
Sugar, beet	1 900	1,500,000
Miscellaneous	5 30	50,000
Diamaceous earth ..	1 10	10,000

Manufactured Output.

	Quantity.
Brick (thousand)	1,700
Cigars (thousand)	100
Lime (barrels)	45,300
Hides (pounds)	200,000
Lard (pounds)	200,000
Meat packed (pounds)	50,000
Tallow (barrels)	750
Olive oil (gallons)	5,500

SANTA CLARA COUNTY.

Santa Clara County is situated on the south arm of San Francisco Bay, and is separated from the Pacific Ocean by one tier of counties. The county seat is San Jose, and is distant 50 miles from San Francisco. The county is 47 miles wide from north to south, and through the center runs the favored Santa Clara Valley, with an average width of 15 miles. The country from the valley slopes upward through rolling hills to the summit of the Mount Diablo range of mountains on the east and to the summit of the Santa Cruz Mountains on the west. Its peculiar location with reference to prevailing winds and ocean currents has a marked effect on the climate, rendering it pleasantly cool in summer and not too cold in winter. The average winter temperature is about 40° and in summer 70°. It is preëminently the horticultural county of California. The statistics accompanying this report shows the variety and quantity of its products.

Its roads are excellent, and make all points easily accessible. More than 300 miles of these roads are sprinkled during the summer months. Three lines of railroads connect it with the outside world. Its population is 70,000. San Jose, the county seat has a population of 30,000. Many flourishing towns and valleys are within its borders. Educational interests are represented by the Leland Stanford Junior University, the Santa Clara College, the University of the Pacific, The College of Notre Dame, and the State Normal School, together with numerous private seminaries and institutions for special educational work. In the public school system there are eight high schools and 104 grammar and primary schools. The annual expenditure for public schools is \$311,500. This is in addition to the municipal expenditures by cities and towns for this purpose. The value of school property is \$910,832.

The valley is drained by a number of streams. In summer their watercourses greatly diminish and the smaller ones wholly disappear. Having their sources in the surrounding hills and sinking as they approach the valley, they augment the subterranean supply of the artesian wells. These are all over the valley, usually from 60 to 100 feet in depth, though some find a larger and more permanent supply at a much greater depth.

The extent and value of agricultural, horticultural, and industrial interests can be gathered from the accompanying statistics.

STATISTICS OF SANTA CLARA COUNTY, 1909-10.

General Statistics.		General Statistics—Continued.	
Area 1,355 square miles, or 867,200 acres.		Number of miles of public roads	1,011
Number of farms	23,652	Road levy per \$100, 1910	40c
Number of acres assessed	727,906	Value of county buildings	\$954,300
Value of country real estate	\$27,322,810	Railroads—	
Of improvements thereon	\$8,345,490	Steam, assessed value	\$2,914,721
Of city and town lots	\$17,394,550	Electric, assessed value	\$864,000
Of improvements thereon	\$11,501,980	Electric power plants, assessed value	\$315,730
Of personal property	\$5,622,405	Electric power lines, assessed value	\$41,660
Total value of all property	\$71,087,235	Telephone Lines—Miles wire, 1,529; poles, 7,950; assessed value	\$161,530
Expended on roads, last fiscal year	\$220,935		
Expended for bridges, last fiscal year	\$20,225		

STATISTICS OF SANTA CLARA COUNTY, 1909-10—Continued.

Cereal Products and Hay.

	Tons of 2,000 pounds.		
	Acres.	Bushels.	Value.
Wheat	1,000	27,500	\$21,600
Barley	4,000	92,500	55,000
Oats	1,000	30,000	20,250
Total cereals..	6,000	150,000	\$96,850
	Acres.	Tons.	Value.
Alfalfa hay	1,500	7,500	\$75,000
Grain hay	7,000	15,000	135,000
Grass hay	2,000	3,000	18,000
Total hay	10,500	25,500	\$228,000

Number of Fruit Trees and Vines.

	Bearing.			Non-bearing.	Total.
Apple	17,200	32,500	49,700		
Apricot	544,000	11,300	555,300		
Cherry	137,700	21,900	159,600		
Fig	1,700	710	2,410		
Lemon	2,600	320	2,920		
Nectarine	1,000	520	1,520		
Olive	10,800	4,500	15,300		
Orange	1,250	705	1,955		
Peach	592,500	40,300	632,800		
Pear	126,200	15,550	141,750		
Plum	271,000	20,700	291,700		
Prune	5,257,900	416,000	5,673,900		
Quince	2,600	320	2,920		
Total fruit..	6,966,450	565,325	7,531,775		
Almond	18,100	4,750	32,850		
Walnut	11,025	2,800	13,825		
Total nut ..	29,125	7,550	36,675		
Grapevines, (acres)	4,117	4,300	8,417		

Wines, Brandies, Etc.

	Gallons.	Value.
Dry wines	1,000,000	\$250,000
Sweet wines	25,000	25,000
Champagne (bottles) ..	350,000	350,000
Beer (barrels)	95,000	725,000
Brandy	450,000	670,000
Alcohol	2,000,000	2,400,000
Total value		\$4,420,000

Number of wineries, 50; number of distilleries, 11; number of breweries, 6.

Dairy Industry.

	No.	Production.	Value.
Creameries	13		\$285,000
Butter (pounds) ..		270,800	85,000
Cheese (pounds) ..		450,000	86,500

Total value \$456,500

Live Stock Industry.

	Number.	Value.
Cattle—Beef	1,500	\$45,000
Stock	12,400	223,200
Dairy Cows—Graded..	6,840	239,400
Thoroughbred—		
Angus	460	23,000
Calves	5,020	60,240
Swine	5,250	21,000
Horses—Thoroughbred	95	20,900
Standard-bred	260	39,000
Common	13,070	530,500
Colts	1,875	37,500
Jacks and jennies ..	44	440
Mules	250	12,500
Sheep	950	2,850
Lambs	450	1,350
Angora goats	155	775
Common goats	340	340
Total stock	48,959	\$1,257,995

Fruits, Vegetables, Etc.

	Total Production.	
	Pounds.	Value.
Green—		
Apples	1,500,000	\$80,000
Apricots	40,000,000	400,000
Asparagus	7,500,000	187,500
Blackberries	751,500	34,400
Beans	1,000,000	30,000
Beets	260,000	2,600
Cabbage	437,500	4,000
Celery	171,875	5,290
Cauliflower	117,000	4,400
Corn	1,812,500	37,500
Cherries	5,625,000	178,500
Figs	75,000	2,500
Grapes	2,376,000	23,760
Lemons (boxes)	1,620	1,620
Loganberries	275,000	5,500
Onions	132,000	3,960
Oranges (boxes)	1,800	1,800
Olives	600,000	20,000
Pears	9,500,000	200,000
Peaches	35,000,000	350,000
Peas	2,500,000	50,000
Irish potatoes	1,150,000	23,000
Prunes	80,000,000	1,600,000
Quinces	200,000	10,000
Raspberries	562,500	32,000
Strawberries	944,000	40,000
Tomatoes	30,000,000	150,000
Totals	222,493,295	\$3,692,170

	Dried—	
	Pounds.	Value.
Almonds	320,000	\$48,000
Apricots	8,000,000	80,000
Beans	316,800	12,840
Onions	820,800	8,210
Pears	200,000	16,000
Peaches	7,000,000	350,000
Prunes	38,000,000	1,995,000
Walnuts	365,000	54,000
Totals	55,022,600	\$2,564,050

	Canned—	
	Cases.	Value.
Apples	7,500	\$15,000
Apricots	67,500	168,750
Grapes	12,000	36,000
Pears	60,000	180,000
Peaches	50,000	150,000
Peas	100,000	300,000
Plums	8,000	20,000
Tomatoes	200,000	200,000
Totals	505,000	\$1,069,750

Poultry and Eggs.

	Dozen.	Value.
Chickens	80,000	\$258,000
Ducks	7,000	28,000
Geese	300	4,500
Turkeys	500	10,000
Eggs	1,000,000	250,000
Total value		\$550,500

Forest Products.

	Amount.	Value.
Area of timber lands (acres)	60,000	\$550,000
Cedar (acres)	50,000	5,000,000
Redwood (acres)	10,000	300,000
Fuel, wood (cords) ...	35,000	160,000
Sash and door fac- tories (number)	5	100,000
Total value		\$1,610,000

Power used for mills and manufactories in county—Steam (number), 230; electrical (number), 120; water (number), 2.

STATISTICS OF SANTA CLARA COUNTY, 1909-10—Continued.

Miscellaneous Products.		
	Pounds.	Value.
Flowers and plants (acres)	150	\$100,000
Garden seed	4,000,000	400,000
Sugar beets (tons) ...	12,000	120,000
Quicksilver (flasks) ..	2,500	102,000
Total value		\$722,000

Manufactories.		
	No. Employees.	Value of Products.
Bookbinderies	2	56
Wood boxes	3	25
Brick	5	105
Brooms	1	103
Carriages and wagons	11	96,000
Cigars	13	50
Coffee, spices, etc....	2	25
Confectionery	28	70
Electrical supplies ..	7	22
Foundries and iron works	12	96
Furniture	5	15

Manufactories—Continued.		
	No. Employees.	Value of Products.
Jewelry	2	5
Leather goods	15	40
Meat products—Slaughtered		135,000
Hides		86,000
Lard		2,500
Tallow		1,200
Olive oil	20,350	61,000
Pickled olives	40,000	20,000
Planing mills	14	625
Potteries	2	20
Soap	1	3
Artificial stone	6	35
Granite and marble..	5	61
Tanneries	2	120
Tin and galvanized iron	7	70
Willow and wooden ware	1	1
Wood turning and carving	1	1
Miscellaneous	80	900
Total value		\$6,141,500

SANTA CRUZ COUNTY.

Santa Cruz County fronts its entire length on the Pacific Ocean. It lies midway between Oregon and Lower California, and is in the heart of Central California. It is separated from San Mateo and Santa Clara counties by the Santa Cruz Mountains, and from Monterey County by the Pajaro River. It is one of the smallest counties, and comprises a narrow strip of mountainous land about 40 miles long and 18 miles broad, forming a vast amphitheater, and sloping from the summits of the Santa Cruz range, whose highest elevation, Loma Prieta, is 4,000 feet, southward and westward to the bay of Monterey.

The curving line of shore and the corresponding curve of the mountain line inclose an irregular, crescent-shaped tract of country, with an average width of 20 miles, which for grandeur, beauty, and variety of scenery equals any expanse of similar size in the world. The sides of the mountains are closely set with forests of pine, redwood, madrone, and other trees, the redwoods having, in many cases, attained gigantic growth.

A number of streams rise in these hills, and bring down the rich alluvial loam into the valleys, which, in their normal condition, teem with native grasses and flowers, and when cultivated yield phenomenal results. These streams are, agriculturally as well as topographically, an important feature, watering as they do every section of land. Besides these, natural springs are innumerable. Nearing the coast, there are many interesting topographical features. The leagues of wide, high, wind-swept grassy plateaus, which form remarkable grazing and dairy lands; the succession of chalk terraces; the broad amphitheatrical valley of the Pajaro; the salt lagunas, picturesque in configuration and surrounded by park-like groves of live oaks; the high sandstone cliffs along the shore; the magnificent ocean drives—all are materials for pleasant investigation.

Along the coast line, a series of raised benches forms a strip of elevated land. This widens to the south of the city of Santa Cruz, and affords a large area of fruitful soil, which has been brought into a high state of cultivation. From Santa Cruz City south the soil consists of light loam, abounding in lime, potash, and phosphoric acid.

In the Pajaro Valley there is a great variety from the rich sedimentary alluvial wash to the light, sandy soil of the foothills.

In the lower part of the valley a clayey loam predominates. This is followed by a heavy adobe higher up, and then the dark, reddish loam of the plains, the latter being the favorite with fruit growers, for it is here that flourish the best orchards.

The average annual rainfall, taken from a record of thirty-four consecutive years, is 25.26 inches, showing that this is a well watered district.

The charm of Santa Cruz is her infinite variety. In lumber products she ranks third in the State. Her butter, cheese and cream might well win her a place in the dairy districts. Hay, grain, potatoes, and the whole range of cereals and vegetables give enormous yields. In the

Department of Agriculture at Washington, D. C., there is a record of 130 bushels of wheat per acre raised in the Pajaro Valley, and while she does not claim to wear the "citrus belt," yet oranges are raised for home consumption, and the cultivation of the lemon is a profitable business; but her deciduous fruits, large and small, her table and wine grapes, and her fine wines, are winning renown. From the summit of the range, more than 2,000 feet above the sea, down to the wide and fruitful valleys along the coast, grow and flourish delicious fruits. Prunes, pears, apricots, peaches, cherries, Japanese and native plums, figs, walnuts, persimmons, olives, and nectarines thrive, but the crop of the largest profit is that of apples, their quality and size being astonishing and their yield as much so. From bellflowers in September to Newtown pippins in December the supply is steady.

The extent of the apple industry is shown by these statistics, and each year finds a large increase in the crop. During the harvesting of the crop in the Pajaro Valley, this industry gives employment to 2,391 males and 698 females, drawing a daily wage of \$6,308.09 and a monthly pay roll of \$198,242.70. The average number of boxes delivered to the packing houses per day totals 57,872 and a total weight of 2,314,880 pounds. Horses used in hauling these number 3,193.

The actual shipment of apples this season was 4,000 cars, shipments being made to Europe and other parts of the world. Independent of these shipments were apples used at the dryers, vinegar factories, canneries, and for home consumption.

This year during the month of October there was held in the city of Watsonville an "Apple Annual" or "show" given over entirely to the apple industry. As its name implies, it is intended to make this show an annual affair.

The fish hatchery at Brookdale and at Scott's Creek Station have produced during the past year silver salmon, steelhead, and rainbow eggs amounting to 2,509,000. There were shipped to the United States Bureau of Fisheries and State Commission 68,000 steelhead eggs.

Many acres have been set out in the last few months to eucalyptus trees, and many more are to be set out during the coming year.

Of the small fruits, the strawberry is the most widely grown and furnishes a practically continuous crop.

In the southern part of the county a large acreage is devoted to the profitable growth of sugar beets, potatoes, beans and onions, and the yield is enormous. Market gardening is profitable.

A great deal of asparagus and rhubarb are grown for outside markets.

Seeds, bulbs, plants, and cut flowers contribute largely to the supply for metropolitan markets.

Dairying is a profitable industry, and thousands of acres of grazing land support well-selected herds of stock.

Poultry raising is a profitable business, the climate and conditions being well adapted for such industry.

Considerable capital is invested in the deep sea fisheries. The fish hatchery at Brookdale, on Clear Lake, has upward of 2,000,000 trout and salmon fry.

During the fall and winter months 5,000,000 or 6,000,000 salmon eggs will be hatched and the fry liberated in the bay. Steelhead and rainbow trout abound in all the thirty odd streams.

The forest covered mountains are a retreat for quail and deer, and the many lagoons and the four beautiful lakes in the Pajaro Valley in fall and winter are feeding places for all varieties of wild ducks.

At Santa Cruz the tent city, pavilion, casino and baths, representing an expenditure of \$750,000, were opened two years ago, and this beautiful summer resort had practically the greatest concourse of pleasure seekers on the coast. It is estimated 100,000 people from San Francisco and interior visited our shores during the summer.

Capitola, four miles east of Santa Cruz, can be reached by both steam and electric railroad. This is another beautiful summer resort.

There are two Carnegie libraries in the county well stocked with the latest works. The public schools throughout the county are of a high standard, as are also the private schools and colleges. The many fine churches represent the leading denominations. There are many fraternal societies, and a large number of them hold meetings in fine lodge rooms in buildings of their own. There are five banks in the county—all sound banking institutions.

The supervisors have done and are doing good work in road building, and the most mountainous places can now be reached by easy grades.

Many industries have developed to the profit producing point. The Santa Cruz Portland cement plant, located 12 miles north of the city of Santa Cruz, represents an expenditure of \$5,000,000, and has the largest capacity for the manufacture of cement of any similar institution of its kind. The power works, tannery, paper mill, soap and glue factory, planing and sawmills, lime kilns and the bitumen industry, are all in active operation, and the general air of thrift and prosperity is apparent. The output of lumber has been large for a great many years, but great tracts of forest still remain. Many of the trees are of ancient growth, and it is not uncommon to see 35,000 feet of clear lumber cut from a single tree.

Santa Cruz, Watsonville, Boulder Creek, Soquel, Aptos, Ben Lomond, Brookdale, Felton, Capitola, Davenport, and Glenwood are the principal towns.

STATISTICS OF SANTA CRUZ COUNTY, 1909-10.

General Statistics.		Live Stock Industry.		
		Number.	Value.	
Area 500 square miles, or 320,000 acres.				
Number of farms	1,765	Cattle—Beef	1,148	\$40,180
Number of acres assessed	257,936	Stock	1,651	33,020
Value of country real estate ...	\$4,856,460	Dairy Cows—Graded..	4,931	197,240
Of improvements thereon	\$1,715,565	Thoroughbred—		
Of city and town lots	\$5,214,645	Guernsey	35	.....
Of improvements thereon	\$2,980,900	Holsteins	175	.....
Of personal property	\$1,976,425	Jersey	62	.....
Total value of all property	\$16,743,995	Calves	2,350	21,150
Expended on roads, last fiscal year	\$76,735	Swine	3,030	24,240
Expended for bridges, last fiscal year	\$8,644	Horses—Thoroughbred	15	10,000
Number of miles of public roads	453	Standard-bred	143	28,600
Road levy per \$100, 1910	60c	Common	5,427	407,025
Value of county buildings	\$187,000	Colts	531	26,550
Railroads, steam—miles, 66.34; assessed value	\$1,083,581	Imported Belgian draft stallion	1	.....
Railroads, electric—miles, 19; assessed value	42,940	Mules	187	14,025
Electric power plants—2; assessed value	\$63,275	Sheep	1,419	5,676
Electric power lines—miles, 98; assessed value	\$24,560	Lambs	738	1,476
Number of acres irrigated	950	Angora goats	973	4,865
		Total stock	22,816	\$814,047
		Wool (pounds)	2,840	511
		Mohair (pounds)	1,100	264

STATISTICS OF SANTA CRUZ COUNTY, 1909-10—Continued.

Cereal Products and Hay.

	Tons of 2,000 pounds.		Value.
	Acres.	Bushels.	
Wheat	55	1,498	\$1,348
Barley	496	17,210	10,325
Oats	2,434	85,795	34,442
Corn	1,080	30,434	27,390
Total cereals..	4,065	134,937	\$73,505
			Value.
	Acres.	Tons.	
Alfalfa hay	270	1,305	\$14,355
Grain hay	9,139	15,253	152,530
Total hay	9,409	16,558	\$166,885

Number of Fruit Trees and Vines.

			Total.
	Bearing.	Non-bearing.	
Apple	700,948	71,462	772,410
Apricot	72,615	10,399	83,014
Cherry	22,320	3,221	25,541
Fig	157	170	467
Lemon	285	206	361
Orange	482	55	537
Olive	175	166	341
Peach	11,494	1,414	12,908
Pear	16,521	2,803	19,324
Plum	19,395	1,445	20,840
Prune	130,398	2,210	132,606
Quince	171	9	180
Other kinds ..	680	.....	680
Total fruit..	975,649	93,560	1,069,209

Almond	184	78	260
Chestnut	147	90	237
Walnut	2,309	1,299	3,608
Total nut ...	2,640	1,465	4,105

Grapevines ...	871,450	151,350	1,022,800
			Value.
	Acres.	Amount.	
Strawberries..	247	.....	247
Raspberries..	30	.....	30
Loganberries..	102	.....	102
Blackberries..	129	.....	129
Black mammoth	12	.....	12
Dewberries ...	2	.....	2
Total acres..	522	.....	522

Forest Products.

	Amount.	Value.
Sawmills (number) ...	4	.....
Grape stakes	193,000	\$4,825
Fuel, wood (cords) ...	28,141	126,634
Laths (thousand)	2,250	7,875
Lumber (feet)	20,726,000	331,618
Pickets (pieces)	155,000	5,425
Piles	229	1,374
Posts (pieces)	252,630	30,315
Railroad ties (pieces) ..	23,810	14,586
Shakes (thousand) ...	1,280	21,760
Shingles (thousand) ...	20,482	35,848
Stave bolts (cords) ...	750	3,750
Miscellaneous	949	17,082
Total value .....	.....	\$594,085

Power used for mills and manufactories in county—Steam (number), 33; electrical (number), 14; water (number), 1.

Dairy Industry.

	Production.	Value.
Butter (pounds)	287,187	\$89,028
Cheese (pounds)	260,400	35,154
Cream (gallons)	15,000	15,000
Creameries, 4; dairies, 28.	.....	.....

Fish Industry.

	Pounds.	Value.
All kinds	1,461,000	\$43,830

Fruits, Vegetables, Etc.

Green—	Total Production. Pounds.	Value.
Apples	123,106,125	\$1,846,590
Apricots	211,760	4,235
Asparagus	9,000	540
Blackberries	584,650	20,462
Black Mammoth	51,000	1,785
Cabbage	79,650	4,780
Celery	104,880	5,244
Cauliflower	84,330	2,530
Corn	29,240	585
Cherries	756,490	37,824
Figs	23,360	1,168
Grapes	5,695,650	56,956
Lemons (boxes)	20	270
Loganberries	758,800	26,558
Pears	1,112,720	16,680
Peaches	1,083,170	27,079
Plums	504,385	20,175
Irish potatoes	9,144,700	114,309
Quinces	35,825	360
Raspberries	132,550	13,255
Strawberries	1,858,790	111,527
Tomatoes	132,900	1,329
Dewberries	5,050	505
Cucumbers (hothouse)	40,000	2,000

Totals

Dried—	Pounds.	Value.
Almonds	1,080	\$140
Apples	3,502,100	210,126
Apricots	787,350	47,241
Beans	472,544	16,539
Chestnuts	2,960	325
Onions	6,270	100
Peaches	2,000	100
Prunes	1,017,090	40,683
Walnuts	49,805	6,475

Totals

Canned—	Cases.	Value.
Apples	16,000	\$40,000
Jelly (dozen)	500	675
Preserves (dozen) ...	500	675

Totals

Poultry and Eggs.

	Dozen.	Value.
Chickens	6,478	\$38,868
Ducks	115	690
Geese	110	1,320
Turkeys	200	4,800
Eggs	719,195	215,758

Total value

Wines, Brandies, Etc.

	Gallons.	Value.
Dry wines	260,725	\$52,145
Beer (barrels)	12,400	86,800
Brandy	1,000	500
Cider	21,532	6,459
Vinegar	1,206,505	180,966

Number of wineries, 26; number of distilleries, 1; number of breweries, 2.

Miscellaneous Products.

	Pounds.	Value.
Bees (hives), number.	466	\$932
Flowers and plants (acres)	34	\$4,000
Honey	10,900	2,180
Hops	70,000	10,500
Garden seed	12,000	1,200
Sugar beets (tons) ...	5,295	26,475
Bituminous rock (tons)	40,000	120,000
Pumpkins (tons)	1,067	4,801
Melons (tons)	691	10,265
Horse beans	31,500	630
Pelts (number)	7,620	2,667

STATISTICS OF SANTA CRUZ COUNTY, 1909-10—Continued.

Manufactories.			Manufactories—Continued.				
	No.	Number of Employees.	Value of Products.		No.	Number of Employees.	Value of Products.
Berry boxes and baskets	1	14	\$12,000	Tanneries	1	35	240,000
Wood boxes	4	15	19,625	Soda works	3	6	15,000
Carriages and wagons	3	6	6,250	Powder works	1	120	900,000
Cement	1	500	2,850,000	Ice plant	1	5	8,000
Cigars	4	16	26,530	Glue factory	1	2	675
Confectionery	7	24	66,000				
Cooper-shops	2	11	39,635				
Foundries and iron works	1	2	4,000				
Leather goods	5	8	17,200				
Lime	2	173	437,500				
Malt .....	..	.....	475				
Meat products—							
Lard			10,920				
Meat packed	6	30	10,625				
Tallow			9,000				
Cement drain pipe ..	1	2	3,000				
Planing mills	8	71	177,950				
Soap	2	4	6,636				

Manufactured Output.		
		Quantity.
Cement (tons)		285,000
Cigars (thousand)		442
Lime (barrels)		350,000
Malt (tons)		95
Hides (pounds)		165,900
Lard (pounds)		109,200
Meat packed (pounds)		85,000
Tallow (barrels)		600
Soap (pounds)		165,900
Powder (kegs)		600,000
Leather (sides)		40,000
Glue (pounds)		7,500

Manufactured Output.

	Quantity.
Cement (tons)	285,000
Cigars (thousand)	442
Lime (barrels)	350,000
Malt (tons)	95
Hides (pounds)	165,900
Lard (pounds)	109,200
Meat packed (pounds)	85,000
Tallow (barrels)	600
Soap (pounds)	165,900
Powder (kegs)	600,000
Leather (sides)	40,000
Glue (pounds)	7,500

SHASTA COUNTY.

Shasta County lies at the head of the famous Sacramento Valley. One mile north of Redding, the county seat, the valley ends and the canyon, second only in fame to the valley, which bears the name of the greatest waterway in the State, begins. The area of the county covers 90 miles from east to west and 60 miles from north to south. Because of its unlimited mining, timber and water resources and the prolific nature of its soils, Shasta County offers unequalled opportunities for the man of small means as well as the capitalist.

Covering a portion of eastern Shasta are the Sierra Nevada Mountains and on the northeastern boundary is the Coast Range. These are lofty, some peaks exceeding 5,000 feet in height, and are very rugged. On the extreme eastern border of the county is Lassen Peak, raising its mighty head 10,577 feet above sea level. This mountain is timbered two thirds of the way up. Hot and boiling springs, and others noted for their medicinal qualities, abound in this region. In the central and southern portions of the county is a semi-circular region embracing over a half million acres of the grand Sacramento Valley proper, the altitude being from 500 feet to 2,500 feet above the sea. The southwestern portion of this section is a succession of rounded hills, varying in height from 50 to 200 feet, while the central and southern portions consist of table-lands, varying in altitude from 500 to 700 feet. Fertile valleys predominate.

Shasta is noted for the number and beauty of its streams. First in importance is the Sacramento River, which enters the county on its northern boundary, traversing it throughout to its southern borders. For 40 miles the magnificent stream meanders through fertile lands, after emerging from the picturesque and rocky canyon. The Sacramento is augmented by the combined McCloud, Pitt, and Fall rivers, the former finding its source at Mount Shasta, on the extreme north, enters the county and travels in a southerly direction, emptying into the Pitt, which earlier has received the Fall River flow, and continuing, still in a southerly course, meets and enters the Sacramento at a point a few miles north of Kennett. Most beautiful of all northern streams is Fall River, meandering for 40 miles through virgin pastures and delightful glades. Besides these main streams, there are numerous tributaries of importance entering the Sacramento on both sides, among them being Battle Creek, the seat of the largest power propositions in the northern counties, Clear Creek and Cottonwood Creek.

The soil of the valleys is an alluvium, a rich sedimentary deposit, largely intermixed with disintegrated rock, and in some parts with a gravel. The usual color is light red, or reddish brown. It is very fertile and excellent for plums, prunes, pears, figs, and small fruits. The mesa lands bordering the valleys are of a sandy loam, with a large percentage of clay, and carrying in many districts, especially in the higher parts, considerable gravel and boulders. Fruit does finely on these mesa lands. On the foothills in a red loam or clay, productive and adapted

for berries. The soil varies on the elevated plateaus of the north and northwest, from a black, sandy loam to a red loam or clay, while to the northwest the soil is generally adobe, productive of grain and rich natural grasses.

Irrigation is unnecessary for most crops, as the rainfall is sufficient. The rainy season begins in September and extends, at intervals of two or three weeks from that time, until May. During this time the ground is thoroughly saturated with moisture, and the rainy period covers the entire growing season. At the end of the wet season grains, grasses, and so forth are ready for the harvest, and fruits, grapes, etc., are beginning to ripen.

Beautiful resorts and health-giving springs abound. The mountains are heavily timbered with sugar pine, cedar, fir, and other valuable timbers. There are some large valleys and extensive plateaus, mostly devoted to general farming, stock raising and wool growing. The foothills are more or less timbered with oak and pine, and their higher portions yield all kinds of minerals and stones—gold, silver, copper, iron, quicksilver, platinum, lead, marble, sandstone, limestone, coal, onyx, etc.—affording also opportunities for lovely homes, to the small farmer, fruit grower, stock raiser, poultryman, and gardener. The climate is pleasant, not extremely hot in summer nor cold in winter. The valleys are capable of producing all things that grow in temperate or semi-tropical regions.

Shasta orchards are a success, and produce heavy crops of the best quality. The prune, peach, pear, plum, apple, apricot, almond, fig, lemon, orange, and olive thrive, while grapes of the wine, table, and raisin varieties have proven a success in the valley districts. Wheat, grasses, and alfalfa crops are prolific. There are good markets for everything produced, and home consumption is not nearly supplied, except in fruits. Grain, hay, butter, eggs, and vegetables are shipped into Shasta trade centers by the hundred car load during the year. Homeseekers will find the land adapted to fruit raising, grain growing, poultry farming, and gardening at lower prices than in the older settled portions of the State.

Stock raising is an important trade factor. Mild winters in lower altitudes obviate the necessity of feeding, while the summer ranges in the mountains make it possible for the stockraiser to keep his herds upon green feed, the greater portion of the year.

The sawmilling industry annually distributes hundreds of thousands of dollars for pay rolls and supplies. The Terry Lumber Company, which operates its mills in the Bella Vista and Anderson regions, makes its central shipping point on the main line at Anderson, its planing mills, yards, and dry houses being connected to the latter town by its own railroad. T. H. Benton also has immense timber reserves at Wengler, in the Big Bend of the Pitt, from where he ships six million feet of logs annually, to his mills and yards at Redding, using the Sacramento River as an economical carrier. There are other large mills in the Shingletown country, where traction engines do the freighting.

At Fall River and Cottonwood there are flour mills and creameries, and a large area of land in Anderson and Balls Ferry, is being prepared for a large number of families who are immigrating from Montana and other states for the purpose of farming ten and twenty acre tracts.

Throughout the Sacramento canyon are dotted numerous resorts, to which come tourists of all climes. They are easy of access, being for the most part on the main line of the Southern Pacific.

Redding, the county seat, is one of the most beautifully located cities on the Pacific Slope, commanding a superb view of both the Sierra and Coast ranges, and an equally peerless view of the Sacramento River, valley, and canyon—east, south, and north.

Anderson, twelve miles south of Redding, the fruit and lumber center of the county, and Kennett, seventeen miles to the north of the county seat, are the two next most important centers, but Coram, where the largest copper smelter in the State is located, and Delmar, the site of a big copper plant, are almost equally important.

Shasta's preëminence in mineral production, giving her the title of "banner county," is largely due to her immense copper output, but in other metals, especially gold and iron, her past records are quickly being beaten through active developments in her gold and iron mines. With the necessity for silicious ores for a flux, in the production of copper, immense activity is being shown in the gold territory west of Redding, and much capital is being interested in this direction as well as in the Old Diggings section.

Statistics showing the productions of the county are included herein, the figures being compiled from reports of the last preceding twelve months.

Copper production in the county has shown enormous strides since 1896, the year of the installation of the pioneer copper smelter in the county. In 1908, with only two smelters running, fairly full handed, the output of the red metal was 30,000,000 pounds; in 1909 it reached the total of 40,000,000 pounds, and in the current year, with the enforced reduction in output, owing to new installations and the low price of copper, the general average will be maintained, and by the end of 1911, with five plants in operation, an output will be attained of 100,000,000 pounds of copper. The gold output for 1909 exceeded \$2,000,000.

In agriculture and horticulture Shasta County has great possibilities for extension, and large landowners are making experiments and tests with a view to obtaining the best returns on their investment. A great increase has been noticeable during the past twelve months in the product from truck gardens, and especially is this so with regard to tomatoes and cabbage, potatoes, cucumbers, cantaloupes, and watermelons. Berries show an increased acreage and larger output, while many orchardists are putting in acreages of cherries, olives, and apples—the latter principally in the famed Manton country, on the Shasta County side of Battle Creek. A new industry in the county is that of nurseries, and one enterprising florist has established himself in a substantial way in Redding. Two new butter factories in the eastern part of the county are thriving, and poultrymen are giving attention to this section.

Irrigation is receiving active attention, as most valuable lands lie within easy access to the numerous streams and watercourses that line the fertile valleys.

As an indication of the prosperity of the county it is noticeable that the tax rate has been reduced from \$2.10 in 1909 to \$1.87½ in 1910, with every prospect of a still further decrease to about \$1.65 the next fiscal year.

STATISTICS OF SHASTA COUNTY, 1909-10.

General Statistics.

Area 4,050 square miles, or 2,590,000 acres.	
Number of farms	1,000
Number of acres assessed	1,523,450
Value of country real estate	\$7,631,325
Of improvements thereon	\$2,405,275
Of city and town lots	\$681,450
Of improvements thereon	\$1,250,775
Of personal property	\$1,459,270
Total value of all property	\$13,560,455
Expended on roads, last fiscal year	\$52,639
Expended for bridges, last fiscal year	\$57,771
Number of miles of public roads	1,020
Road levy per \$100, 1910	40c
Value of county buildings	\$175,000
Irrigating ditches—miles, 200; cost	17,500
Railroads, steam—miles, 133; assessed value	\$2,634,596
Railroads, electric—assessed value	\$15,000
Electric power plants—2 (four plants); assessed value	\$370,699
Electric power lines—miles, 423; assessed value	\$150,450
Number of acres irrigated	3,500
Toll roads (38 miles)	13,600

Cereal Products and Hay.

Tons of 2,000 pounds.

	Acres.	Tons.	Value.
Wheat	3,500	2,000	\$70,000
Barley	10,000	7,000	245,000
Oats	1,350	750	23,250
Corn	100	50	2,000
Total cereals ..	14,950	9,800	\$340,250
Alfalfa hay	9,000		\$108,000
Grain hay	4,000		48,000
Grass hay	9,000		54,000
Total hay	22,000		\$210,000

Number of Fruit Trees and Vines.

	Bearing.	Non-bearing.	Total.
Apple	19,000	6,000	25,000
Apricot	700		700
Cherry	1,000	500	1,500
Fig	1,000	200	1,200
Lemon	600		600
Nectarine	100		100
Olive	9,000	2,000	11,000
Orange	900	750	1,650
Peach	46,000	3,000	49,000
Pear	25,000		25,000
Plum	1,500		1,500
Prune	80,000	4,000	84,000
Quince	150		150
Other kinds ..	10,000		10,000
Total fruit ..	194,950	16,450	211,400
Almond	4,000		4,000
Chestnut	100		100
Walnut	350	100	450
Total nut	4,450	100	4,550
Grapevines	2,000		2,000
Berries, acres ..	300		300

Wines, Brandies, Etc.

	Gallons.	Value.
Drv wines	20,000	\$4,000
Number of wineries, 1; number of breweries, 1.		

Fish Industry.

	Pounds.	Value.
Salmon	50,000	\$5,000

Dairy Industry.

	Production.	Value.
Butter (pounds)	100,000	\$30,000

Fruits, Vegetables, Etc.

	Total Production.
	Pounds.
Green—	
Apples	150,000
Apricots	30,000
Asparagus	9,000
Blackberries	35,000
Cabbage	75,000
Cherries	10,000
Grapes	70,000
Loganberries	12,500
Nectarines	5,000
Onions	25,000
Olives	111,000
Pears	950,000
Peaches	1,000,000
Plums	100,000
Irish potatoes	250,000
Sweet potatoes	25,000
Prunes	2,000,000
Quinces	40,000
Raspberries	8,000
Strawberries	30,000
Tomatoes	100,000
Hops	4,000

Total	5,039,500
Dried—	
Almonds	22,000
Apples	40,000
Apricots	6,000
Beans	50,000
Figs	35,000
Grapes	5,000
Pears	100,000
Peaches	200,000
Prunes	300,000
Total	758,000

Live Stock Industry.

	Number.	Value.
Cattle—Beef	3,200	\$80,000
Stock	10,000	150,000
Dairy Cows—Graded ..	500	20,000
Thoroughbred—		
Herefords	100	6,000
Holsteins	25	3,135
Jersey	400	20,000
Shorthorns	100	6,000
Calves	3,000	30,000
Swine	2,000	8,000
Horses—Thoroughbred ..	2	4,000
Standard-bred	7	7,000
Common	2,000	100,000
Colts	500	10,000
Jacks and jennies	75	525
Mules	100	7,000
Sheep	15,000	45,000
Lambs	12,000	12,000
Angora goats	400	2,000
Common goats	10,000	20,000
Cattle (yearlings)	2,000	20,000
Total stock	61,409	\$550,660
Wool (pounds)	115,000	
Mohair (pounds)	10,000	

Poultry and Eggs.

	Dosen.	Value.
Chickens	700	\$3,500
Ducks	100	800
Geese	50	500
Turkeys	650	19,500
Eggs	6,000	1,500
Total value		\$25,800

Manufactured Output.

	Quantity.
Brick (thousand)	5,000
Cigars (thousand)	200
Flour (barrels)	3,500
Lime (barrels)	15,000
Hides (pounds)	250,000
Tallow (pounds)	55,000

STATISTICS OF SHASTA COUNTY, 1909-10—Continued.

Forest Products.			Manufactories.		
	Amount.	Value.		No. Employees.	Value of Products.
Area of timber lands (acres)	350,000	.....	Brick	3	50 \$45,000
Sawmills (number) ...	7	.....	Cigars	3	6 10,000
Charcoal (sacks)	25,000	.....	Confectionery	3	4 3,500
Fuel, wood (cords) ...	10,000	.....	Flouring mills	2	5 35,000
Laths (thousand)	90	.....	Foundries and iron works	2	45 125,000
Lumber (feet)	30,000,000	\$450,000	Lime	2	75 25,000
Posts (pieces)	4,000	.....	Meat products—		
Shakes (thousand) ...	1,000	8,000	Hides		25,000
			Lard		7,500
Total value		\$458,000	Tallow		5,000
			Pickles		4,500
Power used for mills and manufactories			Pickled olives		1,500
in county—Steam (number), 9; electrical			Planing mills	2	10 10,000
(number), 1.			Marble	1	2 5,000

SIERRA COUNTY.

Sierra County has an area practically all mountainous. The altitude ranges from 2,000 to 8,600 feet, the highest elevation being that of the Sierra Buttes; but the greater portion has an elevation of from 4,000 to 5,000 feet.

The main ridge of the Sierra Nevadas crosses the eastern part from south to north. Several spurs traverse the county from east to west, forming the watersheds of the four principal streams which make the drainage system of the western part. These streams consist of the Middle Yuba River on the south, the North Yuba near the center, and Canyon Creek and Slate Creek on the north; and in the eastern end the many streams that form the headwaters of the Feather and Truckee rivers. Of the peculiar topographical features are the expansive valleys and lakes lying among the loftiest peaks of the Sierra. The lakes vary from one eighth of a mile to three or four miles in length, most of them circular, and, considering their small size, remarkable for their depth.

The important body of agricultural land is Sierra Valley. It extends over the boundary line into Plumas County, and is the largest and the most elevated of the valleys of the Sierra, being 4,750 feet above sea level. It is 30 miles in length and 10 in width. This valley is particularly adapted to stock raising and dairy purposes, and a fine quality of timothy and alfalfa hay is raised. There are several creameries in the valley, and a superior quality of butter is made, of which almost all is shipped to the outside. Considerable beef cattle are fattened for San Francisco and other markets, besides large shipments of sheep. The soil is a deep, black loam, largely admixed with rich vegetable mold, the result of ages of forest growth.

Since 1849 the principal industry has been gold mining. One hundred and ninety millions of dollars have been taken from its rivers, gravel deposits and quartz veins.

The greater portion is practically covered with a virgin belt of soft timber. The lumber cut runs into many millions of feet. The Floriston Paper Mill Company owns timber lands, and uses a large amount of Sierra County lumber.

Average temperature winter 47 degrees, summer 72 degrees, summer nights are pleasantly cool. Annual rainfall, about 60 inches.

Character of agricultural soil: black loam, very rich.

The principal towns are: Downieville, Forest City, Sierraville, Loyalton, Sierra City.

Natural products: white, yellow, and sugar pine, fir, spruce, and cedar, live stock, fruit, berries, and garden truck.

Manufactured products: lumber, boxes, sashes, doors, etc., creamery butter.

Minerals: gold, iron, copper, asbestos, and lime.

Irrigation and power facilities are unlimited.

Transportation facilities: The Boca and Loyalton Railroad, Central Pacific Railway, Western Pacific Railroad, Nevada-California-Oregon

Railway, and Hobart-Mills Railroad. Communication facilities: Sunset Telephone Company, Western Union Telegraph Company, and Sierra Valley Telegraph Company.

Educational facilities: first-class common grammar schools.

Health resorts: Campbell's Hot Springs, Webber, Independence, and Gold Lakes.

Hunting and fishing: trout, mountain quail, grouse, duck, snipe, deer, and bear.

STATISTICS OF SIERRA COUNTY, 1909-10.

General Statistics.

Area 957.4 square miles, or 612,736 acres.	110
Number of farms	351,520
Number of acres assessed	\$1,308,480
Value of country real estate	\$262,225
Of improvements thereon	\$63,405
Of city and town lots	\$275,925
Of improvements thereon	\$267,260
Of personal property	\$2,177,665
Total value of all property	
Expended on roads, last fiscal year	\$7,874
Expended for bridges, last fiscal year	\$12,146
Number of miles of public roads about)	300
Road levy per \$100, 1910	50c
Value of county buildings	\$14,000
Railroads, steam—miles, 29.48; assessed value	\$250,282
Electric power plants—4; assessed value	\$5,750
Electric power lines—miles, 13½; assessed value	\$2,000

Cereal Products and Hay.

Tons of 2,000 pounds.			
	Acres.	Bushels.	Value.
Wheat	345	4,182	\$5,018
Barley	556	2,383	2,402
Oats	502	9,339	11,196
Rye	101	765	774
Total cereals..	1,504	16,669	\$19,390
Tons.			
	Acres.	Tons.	Value.
Alfalfa hay	1,024	1,529	\$15,290
Grain hay	815	720	5,760
Grass hay	15,296	15,564	124,512
Total hay			\$145,562

Number of Fruit Trees and Vines.

	Bearing.	Non-bearing.	Total.
Apple	6,193	280	6,473
Cherry	242	40	282
Peach	356	35	391
Pear	441	16	457
Plum	441	16	457
Total fruit..	7,673	387	8,060
Chestnut	38	10	48
Walnut	45	10	55
Total nut ...	83	20	103

Fruits, Vegetables, Etc.

	Total Production. Pounds.	Value.
Green—		
Apples	370,000	\$7,400
Cabbage	18,000	450
Cherries	9,350	460
Onions	8,000	200
Pears	11,000	330
Peaches	3,600	180
Plums	16,000	320
Irish potatoes	226,000	5,650
Strawberries	6,000	400
Totals	667,950	\$15,390

Wines, Brandies, Etc.

	Gallons.	Value.
Beer (barrels)	206	\$2,700
Number of breweries, 1.		

Dairy Industry.

	Production.	Value.
Butter (pounds)	320,000	\$100,000

Live Stock Industry.

	Number.	Value.
Cattle—Beef	3,390	\$152,000
Stock	4,094	102,350
Dairy Cows—Graded..	1,980	90,000
Thoroughbred—		
Herefords	75	4,500
Shorthorns	75	4,500
Calves	1,750	14,000
Swine	840	5,040
Horses—		
Standard-bred	5	2,500
Common	1,114	89,120
Colts	155	4,650
Mules	62	4,960
Sheep	2,800	9,800
Lambs	1,410	4,230
Angora goats	70	210
Total stock	17,920	\$487,860
Wool (pounds)	21,000	3,360
Mohair (pounds)	80	12

Poultry and Eggs.

	Dozens.	Value.
Chickens	1,200	\$6,000
Ducks	10	70
Geese	1	15
Turkeys	10	150
Eggs	12,000	3,600
Total value		\$9,835

Forest Products.

	Amount.	Value.
Area of timber lands (acres)	212,000	\$650,000
Pine (acres)	212,000	
Sawmills (number)	16	160,000
Fuel, wood (cords)	23,000	47,500
Laths (thousand)	1,500	2,250
Lumber (feet)	50,100,000	720,000
Posts (pieces)	5,000	400
Railroad ties (pieces)	112,000	44,500
Shingles (thousand)..	1,250	3,125
Total value		\$1,627,775

Power used for mills and manufactories in county—Steam (number), 11; water (number), 5.

Miscellaneous Products.

	Pounds.	Value.
Honey	2,000	\$200

Manufactories.

		Value.
Meat products—		
Hides (number)	1,255	6,275
Lard (pounds)	3,700	555
Tallow (pounds)	10,600	424
There are three planing mills, employing 100 men, output valued at \$200,000.		

SISKIYOU COUNTY.

Siskiyou is one of the northern counties of the State, adjoining Oregon for 80 miles on the north. Of its area of 6,048 square miles, 1,500 square miles is valley; the remainder is mountains and forest. Among the mountains are many farms and stock ranches, well watered and wooded. It contains large areas of farming, mining, desert, swamp, and timber lands. Much of the agricultural land is farmed without irrigation, producing good crops of wheat, oats, barley, rye, and in some localities alfalfa and timothy. The so-called desert lands were long considered of little value save for pasturage, but are now being successfully farmed and require only the application of water to produce abundant crops. The swamp lands when drained are exceedingly fertile. The Federal Government is at present engaged in a comprehensive plan of drainage and reclamation in the northeastern portion of this county, and southern Oregon, which contemplates the drainage of the swamp lands and the use of the water in the irrigation of the desert lands. This will make homes for thousands of settlers.

The mining section comprises the west half of the county, and produces nearly one million in gold annually. A system of immense ledges of copper ores have recently been discovered, which, when more fully developed, will add much to the mineral output. There are large deposits of iron ore, lime stone, granite, and marble of the finest quality, and sandstone, that owing to the absence of lime is regarded as the best on the coast. The only jade mine in California is in the western portion of this county,

The agricultural lands are chiefly comprised in Scott Valley in the western portion of the county, Shasta Valley and Little Shasta in the central portion, and McCloud and Butte valleys in the eastern portion. At the different elevations all fruit and vegetables common to the temperate zone thrive.

Timber is everywhere; there are thousands of sections that will cut from ten to twenty million feet of yellow and sugar pine, besides large quantities of red fir and cedar.

The Sierra Nevada and Coast Range mountains meet here. The altitude ranges from 2,000 feet in the valleys to 14,000 feet on the mountain peaks, the highest of these being Mount Shasta. There are localities where snow seldom falls, and regions of perpetual snow; these conditions make it one of the most scenic of the counties.

Many of the swift mountain streams and waterfalls have been harnessed for electrical power. Chief among these is the Siskiyou Electric Power and Light Company's plant at Fall Creek, which is the third largest in the State, and furnishes cheap and abundant power to all parts of the county. Electrical power sufficient to run the machinery of the entire State can be developed from the abundant water power.

The principal river is the Klamath, which with its tributaries drain almost the entire county. This stream is not navigable, and furnishes

a natural dumping ground for the placer mines, its swift current carrying the tailings out to the ocean.

The Southern Pacific Railroad passes through the county from north to south, entering near Coles at the base of the Siskiyou Mountains and leaving it near Dunsmuir, where are located its roundhouse and machine shops. The California Northeastern Railroad, at present a branch of the Southern Pacific, leaves the main line at Weed, and traverses the county in a northeasterly direction, passing through Butte Valley and then extending into eastern Oregon.

The scenic beauties and health-giving springs abounding in all portions of the county make this the mecca of the summer tourist and health seeker. The Marble Mountains, now but little known to tourists, will in time rival the Kings River Canyon, and the Yosemite Valley. Chief among the noted resorts are the famous Shasta Springs, Neys Springs, Shasta Retreat, and Upper Soda Springs, all situated in the Sacramento River Canyon. One hundred thousand gallons of the waters of these springs, and the Table Rock Mineral Springs are bottled annually. Sisson, at the base of Mount Shasta, where the largest fish hatchery in the world is located, Garretson's Springs in the Siskiyou Mountains, and the Klamath Hot Springs are noted health resorts. In all portions of the county fish and game abound, making it an ideal field for the sportsman.

Some of the largest pine lumber mills on the coast are located here, chief among which are the McCloud River and Weed Lumber Company plants. Vast areas of the timber lands after the removal of the timber make valuable farms.

Lumbering is the chief industry, with mining and live stock a close second and third. The mountain ranges furnish splendid range during the summer season for thousands of horses and cattle. New gold mines are being discovered, and old ones continue good with depth.

Yreka is the principal town, the courthouse, jail, hospital, and new hall of records are splendid buildings; two electric plants furnish light and power. The city owns its water system; water is obtained from the adjacent mountains, and being filtered through gravel beds is as pure as any in the State. All this added to our present prosperity, our temperate climate and natural advantages, assures for Siskiyou a bright future. Siskiyou is an inviting field for the homeseeker. By the last census returns there are but three inhabitants per square mile.

STATISTICS OF SISKIYOU COUNTY, 1909-10.

General Statistics.		Fruits, Vegetables, Etc.		
			Total Production. Pounds.	Value.
Area 6,048 square miles, or 3,870,720 acres.				
Number of farms	1,000	Green—		
Number of acres assessed	\$1,894,302	Apples	3,200,000	\$64,000
Value of country real estate ...	\$9,151,415	Beans	30,000	1,800
Of improvements thereon	\$2,822,376	Beets	1,400,000	14,000
Of city and town lots	\$459,235	Cabbage	500,000	10,000
Of improvements thereon	\$999,140	Celery	5,000	500
Of personal property	\$2,150,635	Cauliflower	10,000	200
Total value of all property	\$15,796,406	Cherries	50,000	2,500
Expended on roads, last fiscal year	\$65,426	Onions	90,000	1,800
Expended for bridges, last fiscal year	\$6,367	Pears	100,000	2,000
Number of miles of public roads ..	1,150	Peaches	200,000	4,000
Road levy per \$100, 1910	40c	Plums	400,000	8,000
Value of county buildings	\$1,500,000	Irish potatoes	2,000,000	40,000
Irrigating ditches (miles)	300	Strawberries	12,000	1,200
Railroads, steam (miles)	204	Tomatoes	50,000	1,000
Electric power plants (number) ..	6			
Electric power lines (miles) ...	163	Total value		\$151,000

STATISTICS OF SISKIYOU COUNTY, 1909-10—Continued.

Cereal Products and Hay.

	Tons of 2,000 pounds.		Value.
	Acres.	Bushels.	
Wheat	100,000	2,000,000	.....
Barley	10,000	200,000	.....
Oats	14,000	560,000	.....
Rye	5,000	cut for hay	.....
Corn	700	.....	.....
	Acres.	Tons.	Value.
Alfalfa hay ...	35,000	105,000	\$840,000
Grain hay	12,000	24,000	240,000
Grass hay	15,000	35,000	280,000
Total hay	62,000	164,000	\$1,360,000

Number of Fruit Trees and Vines.

	Bearing.
Apple	16,000
Apricot	550
Cherry	875
Nectarine	100
Peaches	5,000
Pear	2,500
Plum	3,500
Prune	2,000
Total fruit	30,425
Almond	50
Walnut	500
Other nuts	550
Grapevines (acres)	25
Berries (acres)	100

Wines, Brandies, Etc.

	Gallons.	Value.
Natural mineral water	1,000,000	\$125,000

Dairy Industry.

	Production.	Value.
Butter (pounds)	680,000	\$242,000
Cheese (pounds)	40,000	\$6,000

Live Stock Industry.

	Number.	Value.
Cattle—Beef	8,000	\$320,000
Stock	36,000	720,000
Dairy Cows—Graded..	4,500	180,000
Calves	13,000	195,000
Swine	8,000	120,000
Horses—Thoroughbred	16	32,000
Common	4,000	400,000
Colts	1,500	45,000
Jacks and jennies	20	20,000
Mules	900	135,000
Sheep	18,000	72,000
Common goats	600	1,800
Total value		\$2,240,800
Wool (pounds)	100,000	20,000
Mohair (pounds)	2,400	400

Forest Products.

	Amount.	Value.
Area of timber lands (acres)	2,000,000	\$4,000,000
Sawmills (number) ..	52	
Lumber (feet)	220,050,000	4,400,000

Miscellaneous Products.

	Pounds.	Value.
Bees (hives), number.	5,000	\$25,000
Honey	125,000	12,500

Manufactories.

	No. Employees.	Value of Products.
Wood boxes	6	\$1,000,000
Flouring mills	3	60,000
Jewelry	6	.....
Leather goods	10	.....
Lime	4	.....
Malt	3	.....

Manufactured Output.

	Quantity.
Cigars	200,000

SOLANO COUNTY.

Nestled in the foothills of the Coast Range on its western border, and extending across broad acres of the most fertile land in bounteous California till its eastern confines are marked by the majestic Sacramento River, lies Solano County. It is, in part, in the Sacramento Valley, the great stream of northern California breaking through Solano's hills in the onward rush of ages toward the sea, and thousands of its acres being in the vast area that has been a world's granary for years, its products going to all lands. A quarter of a million acres, nearly half of Solano's area, is devoted to grain raising. The wheat grown here is the best milling wheat produced in the State. Thousands of cattle, horses, and sheep graze on the upland pastures and marsh lands, and great industrial establishments pay fortunes in wages annually, but the brightest gem in the diadem of resources and industries that marks the county's unquestioned leadership is the fruit produced in its sheltered valleys, a product that has made the county famous far and wide. The first deciduous fruit sold in the United States each year is grown in Solano County, where are several sequestered valleys, with gently rising slopes, sheltered by ranges of high hills that bar the egress of moisture-laden clouds in one season and shut out the hot, dry winds of another. Here the trees bloom in February and the fruit forms rapidly, ripening beneath the genial heat of the spring season, which is really early summer. In early April the shipments begin and continue until late fall. The soil is unexcelled, even in California, for productiveness, and the fruit raised on the limited area is sold for millions of dollars annually, returning fortunes to the orchardists of this favored section. Citrus fruits are marketed here a month ahead of the southern California products.

In the eastern section of the county, where the enterprise of man has wrested broad acres from overflow, is another fabulously rich section, the delta lands of the Sacramento River being noted for their productiveness. In addition, many large industrial establishments are located within the county, a great majority of the people being prosperous wage workers, whose yearly earnings, with the resources of the soil, the products of field, farm, and factory, make a store of wealth and prosperity that seems incredible, the income of the county from all sources exceeding the princely sum of twenty-two million dollars per year.

This favored section is of a limited area. From east to west its extreme length is 45 miles, while from north to south the county measures 35 miles. The surface of the county is 911 square miles, or 583,000 acres, of which 40,000 acres are water, included in the Sacramento River and Suisun and San Pablo bays. Besides its great natural resources, or rather because of them, Solano County ranks as one of the strongest counties in California, from a financial view-point. There is not a dollar of county debt, either bonded or floating. Three communities—Vallejo, Suisun, and Rio Vista—own their own water

systems and supply their inhabitants at rates at least fifty per cent lower than those paid in cities depending upon private capital for this essential necessity. The real property and improvements in the county are worth, at conservative valuation, \$30,000,000, while the mortgages amount to the comparatively insignificant sum of \$2,666,000, the major portion of which is represented in money invested in home building within the municipalities. The enormously rich agricultural and horticultural holdings are practically free of incumbrance.

The tax rate for county purposes is from \$1.00 to \$1.10 on the \$100.00 outside incorporated cities and towns, and 40 cents less inside, where no levy is made for road purposes. The expenditures, while by no means extravagant, are liberal for school, road, and hospital expenses. The county salary roll, including township officers, is about \$45,000 per year. The sum of \$50,000 to \$60,000 is annually spent on the roads, which are maintained in excellent condition throughout the year. Public schools cost over \$130,000 per year, of which \$37,500 is raised in the county tax. The sum of \$17,500 is spent sprinkling the roads, and over \$11,000 for the expense of the homeless, sick, and indigent.

As in other respects, Solano County is greatly favored in climate. The rainy months are from November to March, with desultory rains a month or six weeks earlier and later. The dry season is from six to eight months. Grain and hay are kept in the field till hauled for shipment. Snow and hail are practically unknown, and frosts rarely do any damage to even delicate plants. The average rainfall is 16 to 20 inches, though it is greater in the fruit growing sections. Intense cold is unknown, and at Mare Island Navy Yard and other industrial plants hundreds of men work in the open air the year round. In summer the heat is never oppressive, rarely going above 100 degrees Fahrenheit. The nights are cool, a breeze from the ocean coming each day at sunset, cooling the atmosphere, and greatly adding to the health and comfort of the people.

The population in 1900 was 24,193, and is now estimated at 30,000, of whom nearly one half live in Vallejo and Benicia, the industrial centers of the county. The county could easily support double its present population.

The land of Solano County varies in the purposes for which it is adapted, the following table having been compiled by E. N. Eager, when county surveyor, to show the area available for different modes of cultivation:

No. 1 fruit land -----	53,000 acres
No. 2 fruit or No. 1 grain land -----	240,000 acres
No. 2 grain or No. 1 pasture land -----	75,000 acres
Pasture land -----	45,000 acres
Mountainous grazing land -----	30,000 acres
Marsh or tule land -----	100,000 acres
Water -----	40,000 acres

STATISTICS OF SOLANO COUNTY, 1909-10.

General Statistics.

Area 911 square miles, or 583,040 acres.	
Number of farms	3,100
Number of acres assessed	519,686
Value of country real estate	\$10,501,856
Of improvements thereon	\$2,137,796
Of city and town lots	\$2,217,346
Of improvements thereon	\$3,332,989
Of personal property	\$2,575,388
Total value of all property	\$20,932,310
Expended on roads, last fiscal year	\$84,252
Expended for bridges, last fiscal year	\$8,349
Number of miles of public roads	686
Road levy per \$100, 1910	4.11c
Value of county buildings	\$200,000
Railroads, steam—miles, 73.45; assessed value	\$1,815,398
Railroads, electric—assessed value	\$26,039
Electric power lines—assessed value	\$140,025
Number of acres irrigated	2,000

Cereal Products and Hay.

Tons of 2,000 pounds.		Value.
Acres.	Tons.	
Wheat	130,000	\$2,340,000
Barley	35,000	600,000
Oats	6,000	75,000
Corn	300	.....
Total cereals	191,300	\$3,015,000
Alfalfa hay	1,835	\$88,000
Grain hay	1,500	88,000
Total hay	16,835	\$168,000

Wines, Brandies, Etc.

Gallons.	
Dry wines	345,000
Sweet wines	250,000
Champagne	20,600
Beer (barrels)	2,000
Vinegar	800
Number of wineries, 3; number of breweries, 3.	

Fish Industry.

Salmon	Pounds. 600,000
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Dairy Industry.

	Production.
Butter (pounds)	4,176,530
Bottled milk (gallons).....	720,000
Number of creameries, 6; number of bottling concerns, 1.	

Fruits, Vegetables, Etc.

Total Production.		Value.
Green—	Pounds.	
Apples	2,600	\$78
Apricots	1,148,662	46,594
Blackberries	3,000	300
Cherries	2,377,620	261,538
Figs	10,000	900
Grapes .....	.....	52,872
Nectarines	12,108	348
Pears	18,000,000	450,500
Peaches	4,391,333	108,783
Plums	3,269,280	129,328
Totals	31,433,603	\$1,051,236

Dried—		Value.
Pounds.	Pounds.	
Almonds	505,354	\$53,133
Apricots	697,258	59,260
Beans	250,000	7,500
Cherries	1,683	58
Figs	163,989	4,896
Nectarines	20,277	1,388
Pears	3,023,055	153,521
Prunes	7,670,000	306,000
Walnuts	35,000	2,800
Apricot kernels	13,476	199
Totals	13,098,668	\$633,755

Canned—		Value.
Cases.	Cases.	
Asparagus	40,000	\$150,000
Fruits	25,700	61,100
Totals	65,000	\$211,100

Live Stock Industry.

Number.		Value.
Cattle—Beef	Number.	
Stock	2,243	\$67,300
Dairy Cows—Graded	2,546	76,235
Thoroughbred—	6,518	140,195
Angus	540	7,000
Shorthorns	90	9,000
Calves	5,000	20,000
Swine	3,481	17,325
Horses—Thoroughbred	60	5,600
Standard-bred	130	9,800
Common	8,480	212,000
Colts	531	21,350
Jacks and jennies	55	4,150
Mules	1,592	119,380
Sheep	60,000	180,000
Lambs	15,000	22,500
Total stock	85,260	\$822,635
Wool (pounds)	600,000	90,000

STANISLAUS COUNTY.

Stanislaus County lies in the northern end of the great San Joaquin Valley 114 miles from San Francisco, and 30 miles from tide water on the San Joaquin River. It is bounded by the Sierra Nevada Mountains on the east and the Coast Range Mountains on the west. The county is drained by three large rivers, the Stanislaus, the Tuolumne, and the San Joaquin rivers. The soil ranges from a light sandy loam in the southerly part to a heavy sandy loam in the central part, and adobe and red lands in the east. The climate is marked by long, dry, and only moderately hot summers, and short, mild winters, the average summer temperature being 72°. Ice rarely forms in the winter, and then only a thin skin. Lemon and orange trees flourish the year around without shelter.

As a health resort the county is not surpassed by any county in the State. Malaria is practically unknown, and we are not subject to any contagious or other dangerous diseases.

The county is crossed by four lines of railways, while the Sierra road connects Oakdale and vicinity with the mountain counties to the north. A short line of road connecting Modesto with the Santa Fe has been completed during the past year. A line connecting Modesto with tide water at Stockton is now in process of building, and other lines are projected.

The county contains four incorporated towns—Modesto, the county seat, in the central part, Newman in the west, Turlock in the south, and Oakdale in the north.

Education is provided for by many grammar schools and fine high schools.

The two irrigation districts are being rapidly cut up into small tracts and planted to alfalfa, fruit, and vines.

STATISTICS OF STANISLAUS COUNTY, 1909-10.

General Statistics.		Live Stock Industry.		
		Number.	Value.	
Area, 951,040 acres.				
Number of farms	4,000	Cattle—Beef	834	\$7,720
Number of acres assessed.....	874,000	Stock	11,461	137,675
Value of country real estate ...	\$13,481,695	Dairy Cows—Graded..	8,000	600,000
Of improvements thereon	\$1,406,175	Thoroughbred—		
Of city and town lots	\$1,401,205	Dutch belted	20	2,000
Of improvements thereon	\$1,364,440	Guernsey	10	1,000
Of personal property	\$2,909,270	Holsteins	100	10,000
Total value of all property	\$21,184,005	Jersey	300	45,000
Expended on roads, last fiscal year	\$50,152	Polled Angus	9	900
Expended for bridges, last fiscal year	\$61,533	Calves	7,189	58,025
Number of miles of public roads	900	Swine	8,000	80,000
Value of county buildings	\$80,000	Horses—		
Irrigating ditches—miles, 265; cost	\$1,149,425	Standard-bred	43	950,040
Railroads, steam—miles, 131.36; assessed value	\$3,018,387	Common	8,253	379,075
Electric power plants—5; assessed value	\$30,550	Colts	1,843	48,435
Electric power lines—miles, 87; assessed value	\$88,370	Jacks and Jennies	87	5,285
Number of acres irrigated	97,925	Mules	4,006	253,400
		Sheep	27,454	68,895
		Lambs	13,870	6,940
		Angora goats	666	1,550
		Total stock	92,145	\$2,655,940
		Wool (pounds)	300,000	52,000

STATISTICS OF STANISLAUS COUNTY, 1909-10—Continued.

Fruits, Vegetables, Etc.

Green—	Total Production. Pounds.	Value.
Apples	944,000	\$9,440
Apricots	1,810,000	22,625
Asparagus	1,200	600
Blackberries	40,000	4,000
Cabbage	40,000	800
Celery	5,000	500
Cauliflower	40,000	800
Cherries	54,000	4,320
Grapes	11,200,000	66,650
Grape fruit	300	80
Limes (boxes)	50	300
Lemons	25,000	2,500
Loganberries	20,000	1,600
Nectarines	6,000	60
Onions	200,000	2,000
Oranges	500,000	5,000
Olives	300,000	4,500
Pears	905,000	9,050
Peaches	2,082,000	20,800
Peas	80,000	3,200
Plums	805,500	10,055
Irish potatoes	300,000	3,000
Sweet potatoes	10,010,000	175,175
Prunes	1,438,000	28,760
Quinces	14,100	282
Raspberries	6,000	500
Strawberries	20,000	1,700
Tomatoes	20,000	200
Watermelons	18,545,000	370,900
Cantaloupes	1,800,000	18,000
Dried—	Pounds.	Value.
Almonds	146,320	.....
Apricots	728,000	.....
Beans	392,500	.....
Pears	5,000	\$250
Peaches	800,000	.....
Peas	52,360	28,005
Raisins	270,000	16,200
Totals	2,134,180	\$201,543
Canned—	Cases.	Value.
Apricots	5,888	\$12,953
Peaches	30,569	87,242
Peas	30,000	54,000
Plums	162	356
Tomatoes	2,500	3,750
Peaches in gallon cans	3,242	5,855
Apricots in gallon cans	1,203	2,646
Totals	72,664	\$146,802

Dairy Industry.

	Production.	Value.
Cream	52,140,880	\$938,655
Butter (pounds)	2,535,519	903,144
Creameries, 4; cream stations, 12.		

Poultry and Eggs.

	Dozen.	Value.
Chickens	30,872	\$154,560
Ducks	150	600
Geese	50	200
Turkeys	300	10,800
Eggs	1,003,794	334,598
Total value		\$500,758

Forest Products.

	Amount.	Value.
Fuel, wood (cords) ...	2,000	\$8,000
Power used for mills and manufactories in county—Steam (number), 20; electrical (number), 12; water (number), 2.		

Miscellaneous Products.

	Pounds.	Value.
Bees (hives), number.	2,000	\$2,000
Beeswax	18,000	270

Cereal Products and Hay.

Tons of 2,000 pounds.

	Acres.	Bushels.	Value.
Wheat	82,500	1,856,250	\$1,559,250
Barley	130,050	3,058,776	1,376,449
Oats	17,010	459,045	210,150
Rye	1,520	41,520	27,988
Egyptian corn	6,438	100,400	65,260

Total cereals. 237,516 5,515,991 \$3,239,097

	Acres.	Tons.	Value.
Alfalfa hay	71,169	259,614	\$2,176,719
Grain hay	7,500	14,000	36,000
Grass hay	1,000	1,000	6,000

Total hay 79,669 264,614 \$2,218,719

Number of Fruit Trees and Vines.

	Bearing.	Non-bearing.	Total.
Apple	4,700	1,040	5,740
Apricot	9,050	31,000	40,050
Cherry	1,350	1,100	2,450
Fig	6,150	160,200	166,350
Lemon	2,330	3,210	5,540
Nectarine	60	125	185
Olive	5,330	10,750	16,080
Orange	10,780	15,320	26,100
Peach	50,410	398,510	448,920
Pear	3,620	6,480	10,100
Plum	5,370	7,820	13,190
Prune	7,190	7,180	14,370
Quince	94	65	159
Other kinds ..	20	35	55

Total fruit.. 105,464 942,835 1,049,289

Almond	8,960	62,050	71,010
Walnut	4,720	3,640	8,360

Total nut .. 13,680 65,690 79,370

Grapevines ...	1,050	8,450	9,500
Berries, acres. 75			75
Acres of cantaloupes			150
Watermelons			401
Garden truck			1,254
Trees			9,350
Peanuts			6
Tomatoes			40
Sorghum			30
Beets			7
Nursery			30
Miscellaneous			302

Manufactories.

	No. Employees.	Value of Products.
Brick	1	10
Cigars	3	6
Confectionery	3	12
Flouring mills	1	12
Leather goods	8	20
Meat products—		
Hides		42,372
Lard		880
Tallow		1,554
Olive oil		4,000
Vinegar	1	.....
Ice	3	10
Mealalfa	1	6
Grape juice	1	10

Manufactured Output.

	Quantity.
Brick	600,000
Cigars	300,000
Flour (barrels)	15,000
Hides (pounds)	470,800
Lard (pounds)	8,800
Tallow (pounds)	38,850
Olive oil (gallons)	1,000
Ice (tons)	1,000
Mealalfa	1,500

SUTTER COUNTY.

Almost in the center of the far-famed valley of the Sacramento is located the county of Sutter, the larger portion of which lies between the Sacramento and Feather rivers directly at their confluence. The remaining portion of the county lies east of the Feather River, just south of Bear River. Surrounded by rivers on almost every side, it is evident that the soil of the county is largely river-made, the wash of a thousand years from the Sierra Nevada and Coast Range Mountains, and is deep and fertile, the equal of any in the whole State of California.

Although fruit and grain raising is the principal industry of the county, dairying is rapidly becoming an important industry and can be carried on successfully in almost any part of the county. There being one of the largest creameries in the State located at Meridian, that of the Western Consolidated Creamery Company, affords a market for the produce of the dairymen. There is also another creamery establishment located in Yuba City, which is doing a thriving business.

In the town of Yuba City, which is the county seat, with a population of 2,000, there are located one large packing house, two canneries, flour mill, and other smaller manufacturing concerns, which give employment to several hundred people during the harvest season.

The western portion of Sutter County in particular is being rapidly developed. The large land holdings are being cut up and sold out in small tracts to the Eastern homeseeker, upon which he can make a most profitable living. Meridian is a prosperous little town, located in the western portion of the county, as well as Live Oak, in the northern part, and Nicolaus in the southern division.

Transportation facilities about the county are of the best, there being the Western Pacific, Southern Pacific, Northern Electric railway companies, and river boats on the Sacramento River.

Sutter County is the home of the Thompson seedless grape, which is being grown so extensively in various valleys of the State. The largest vineyard of the Thompson variety in the world, which is owned by J. P. Onstott, is located but two miles west of Yuba City.

STATISTICS OF SUTTER COUNTY, 1909-10.

General Statistics.	General Statistics—Continued.
Area 601 square miles, or 384,079 acres.	Expended for bridges, last fiscal year
Number of farms	Number of miles of public roads
Number of acres assessed	Road levy per \$100, 1910
Value of country real estate	Value of county buildings
Of improvements thereon	Irrigating ditches—miles, 10;
Of city and town lots	cost
Of improvements thereon	Railroads, steam (miles)
Of personal property	Railroads, electric (miles)
Total value of all property	Electric power lines—miles,
Expended on roads, last fiscal year	102.10; assessed value
	Number of acres irrigated

STATISTICS OF SUTTER COUNTY, 1909-10—Continued.

Number of Fruit Trees and Vines.			Cereal Products and Hay.		
	Bearing.	Non-bearing.	Tons of 2,000 pounds.		
			Acres.	Busbels.	Value.
Apple	4,372	3,988	21,596	431,920	\$388,728
Apricot	4,804	.....	26,003	780,090	351,040
Cherry	1,186	294	3,825	153,000	68,850
Fig	13,456	5,255	1,160	146,400	27,880
Lemon	754	.....	Total cereals.. 52,584 1,511,410 \$836,498		
Olive	1,245	.....	Acres. Tons. Value.		
Orange	1,110	.....	4,890	48,900	\$342,300
Peach	180,854	37,132	6,185	9,278	92,780
Pear	11,309	6,641	Total hay 11,075 58,178 \$435,080		
Plum	5,319	600	Fish Industry.		
Prune	58,612	5,216	Pounds. Value.		
Total fruit..	283,012	59,126	Salmon	40,000	\$2,800
Almond	68,895	26,669	Pike	5,000	250
Walnut	507	227	Striped bass	5,000	350
Total nut ..	69,402	26,896	Totals	50,000	\$3,400
Grapevines,			Live Stock Industry.		
acres	4,000	1,200	Number. Value.		
Berries, acres.	15	2	Cattle—Beef	1,250	\$50,000
Fruits, Vegetables, Etc.			Stock	4,500	112,500
	Total	Value.	Dairy Cows—Graded..	4,064	162,560
Green—	Production.		Calves	2,899	34,788
Apples	700,000	\$14,000	Swine	6,043	72,516
Apricots	200,000	2,500	Horses—Thoroughbred	7	7,000
Asparagus	120,000	2,400	Standard-bred	409	81,800
Blackberries	24,000	960	Common	2,515	201,200
Cabbage	60,000	450	Colts	1,276	89,320
Cherries	74,000	3,700	Jacks and jennies...	43	5,450
Grapes	16,000,000	240,000	Mules	1,950	273,000
Olives	200,000	4,000	Sheep	50,109	150,327
Pears	1,600,000	32,000	Lambs	9,294	18,588
Peaches	10,500,000	105,000	Total stock	84,359	\$1,260,049
Plums	300,000	3,750	Wool (pounds)	300,000	37,500
Irish potatoes	2,265,000	19,385	Poultry and Eggs.		
Totals	32,043,000	\$428,145	Dozen. Value.		
Dried—	Pounds.	Value.	Chickens	13,008	\$78,048
Almonds	350,000	\$38,500	Turkeys	1,118	22,360
Apricots	28,000	2,800	Eggs .....	.....	142,000
Beans	972,000	38,800	Total value .....	.....	\$242,408
Figs	750,000	18,750	Miscellaneous Products.		
Pears	50,000	4,000	Pounds. Value.		
Peaches	1,828,000	74,491	Bees (hives), number.	395	\$874
Prunes	1,350,000	67,500	Hops	75,000	15,000
Raisins	14,200,000	710,000	Alfalfa seed	150,000	24,000
Totals	19,528,000	\$954,841	Sutter county has one flour mill, that		
Canned—	Cases.	Value.	employs eight people, with an annual		
Peaches	75,000	225,000	product worth \$140,000.		
Dairy Industry.					
	Production.	Value.			
Butter (pounds)	474,500	\$142,350			
Cheese (pounds)	480,000	76,800			
Creameries, 2; skimming stations, 1.					

TEHAMA COUNTY.

Tehama County occupies the upper or northern portion of the Sacramento Valley. It is 200 miles north of San Francisco and 120 miles north of Sacramento. Part of its eastern boundary follows the summit of the Sierra Nevada Mountains, and its western boundary lies along the summit of the Coast Range. Its greatest length is 78 miles; its width from north to south, 38 miles. Of its area, speaking roughly, 700,000 acres are agricultural lands, 800,000 grazing, and 500,000 timber.

Red Bluff is the county seat. It is a clean, modern little city, located upon an elevated plain, with superior drainage, and with the Sacramento River washing the foot of the bluffs on one side. Other towns are Corning, Tehama, Vina, Paskenta, and Kirkwood.

The county is easily reached, being on the line of the California and Oregon branch of the Southern Pacific Railroad. Two lines of this road converge at the town of Tehama, 12 miles below Red Bluff; one coming up the valley on the west side, and the other on the east side of the Sacramento River. North of Tehama there is but one line of track. The Sacramento River is navigable to Red Bluff, and steamboats from San Francisco and Sacramento make weekly trips up and down during most of the year.

Telegraph and telephone lines follow the railroad, and several private lines are in operation.

The public school system is complete and excellent. A school is maintained wherever there is need of one.

The Sacramento River runs through the county from north to south. From this river there is a rise to the east and west until the summit of the mountain range is reached. South of Red Bluff and west of the river lie broad plains; beyond these rolling hills developing into the foothills of the mountains, and then the mountains themselves, which rise quite abruptly to a height of from 3,000 to 9,000 feet.

In the alluvial land along the river the soil is mainly a dark brown, almost black, sandy loam, rich and deep. The table-land to the east is so rocky as to be of no use except for stock raising. On the west of the river the loamy lands merge into clayey loam second bottom; farther west is the sandier soil of the plains, gray, brown, and red in color; then the hills with reddish soil and gravelly loam. The creek bottoms have generally a yellowish soil. North of Red Bluff, in the hilly country, it is chiefly reddish clay and gravelly loam.

Tehama County is well watered. Numerous creeks carry streams from the mountain snows to the river. Wells can be dug anywhere to reach water at a moderate depth.

Experience has shown that plenty of water means an increase in product and variety. It is practiced to some extent, but mostly for the cultivation of alfalfa. There is a great deal of water available for irrigation and the development of electric power, awaiting only the capital and energy to make it return a large profit.

The principal industries are horticulture, agriculture, stock raising, and lumbering. There is practically no mining. A large deposit of chrome ore to the west, valuable sulphur springs to the east, some indifferent placer claims to the north, and the story of mining is told.

The fruit industry gives employment to a large number of people, who can engage in healthful outdoor work in summer. Several thousand persons are directly or indirectly engaged in some branch of the fruit business.

Olives are fast coming into favor as a crop and as a food. The tree grows rapidly and yields abundantly. The fruit brings a good price, and the demand is constant and growing. The fruit is picked green or ripe.

Oranges and lemons do well and bear abundantly. No attempts were made to plant them in quantity until within the past few years. There are in yards all over the county numberless trees that bear profusely. Several small orchards have been planted within the last few years, but they have not yet come into bearing. The trees are healthy and vigorous.

Almonds are being grown with success.

Raisin grapes, and indeed all grapes, grow remarkably well. The raisins can be cured in the sun during the long summer days.

An immense winery is located on the Stanford ranch, in the southern part of the county.

Peaches are the principal fruit. They are shipped green, and are canned and dried. The bulk of the crop is dried.

Prunes are readily cultivated and yield abundantly.

The apricot is the third fruit in importance. All the apricots are dried. The pits are sold for fuel, or for extracting the oil, which is used by druggists and confectioners.

Pears do well. The fruit is nearly all shipped green. The Bartlett is the favorite.

Figs are attracting more attention since the procurement of blastophaga, the insect which fertilizes the Smyrna fig. A great many of these trees are now being planted, and no doubt this fruit will assume a larger place in the output of the county hereafter.

Apples are grown only in the foothills. The chief apple-producing region of the county is at Manton, 35 miles to the northeast of Red Bluff, where very fine apples are raised.

Berries and all small fruits do well. They come into market early and sell readily.

In agriculture there has been a gradual change from the growing of wheat to fruit or other grains.

Hay is made from a mixture of wild oats and wheat grown together and cut when just on the point of turning. It is cured on the ground and then stacked.

Alfalfa, where water can be obtained, is the best of all forage crops. It is a splendid feed for cattle, hogs, and horses.

Experiments are being made looking toward the cultivation of hops and sugar beets.

The stock business is carried on under conditions that differ from those of the Eastern states, and are differing from those of former

years here. The owner of cattle, sheep, and goats finds it necessary to own or control two ranges; one in the valley for the winter months, and one in the mountains for the summer season. Considerable land has been withdrawn into temporary forest reserves. The number of men engaged in the stock business has greatly increased, and range land has been in greater demand as a consequence.

Sheep raising is easily the favorite branch of the stock business. This is the principal wool-producing county of northern California, and indeed of the State. Twice each year the buyers come here, and there is a busy time until the wool is sold. It is sometimes bought before the sheep are sheared. The favorite breeds of sheep are Spanish Merino, French, Merino, Southdown, and Cotswold for wool, and Shropshire more particularly for mutton.

The cattle business is conducted in much the same general way as the sheep business, except that the animals do not require constant care and herding; there is a further difference, that nearly every farmer has at least a few head of cattle, but few of them have any sheep. The favorite breeds of cattle are Holstein, Hereford, Jersey, and Durham.

Of late years Angora goats have come into greater favor. They are hardy animals, readily adapting themselves to a mountainous and hilly country which no other animal can occupy. They will eat almost anything; can protect themselves from wild animals, and their wool or mohair is in demand and brings a good price.

There is everywhere plenty of timber of various kinds for fuel, posts, etc., for immediate local use. Oaks are the principal trees of the valley, except along the streams, where willows, cottonwoods, and sycamores abound. Oak wood is the favorite fuel. But in the Sierra there is a magnificent belt of timber containing a great preponderance of sugar pine, which is one of the finest of timber trees. Several sawmills are located in this timber belt, and most of the land, if not all, is now owned by private individuals or corporations.

The wool, lumber, stock, fruit, hay, grain, etc., can all be sold at Red Bluff. A market is always available in San Francisco; and in Red Bluff, the county seat, there are local individuals and firms ready and willing to buy all of these products that are offered. There are large packing houses for fruit, warehouses for wool and grain, livery stables for hay, a flouring mill for wheat, and railroad and river means of transportation.

The large land holdings are being broken into smaller tracts to encourage immigration and settlement. The outlook is most hopeful.

STATISTICS OF TEHAMA COUNTY, 1909-10.

General Statistics.		Manufactories—Continued.	
Area 3,200 square miles, or 2,048,000 acres.		Road levy per \$100, 1910	38c
Number of acres assessed	1,344,294	Value of county buildings	\$75,000
Value of country real estate....	\$6,992,040	Irrigating ditches—miles, 355;	
Of improvements thereon	\$1,170,280	cost	\$86,000
Of city and town lots	\$592,800	Railroads, steam—miles, 57.83;	
Of improvements thereon	\$1,142,855	assessed value	\$1,778,044
Of personal property	\$2,339,950	Electric power lines—miles; 101;	
Total value of all property	\$12,287,925	assessed value	\$52,050
Expended on roads, last fiscal		Telegraph lines—miles, 116; as-	
year	\$40,710	sessed value	\$12,795
Expended for bridges, last fis-		Telephone lines—miles, 115; as-	
cal year	\$38,924	sessed value	\$10,930
Number of miles of public roads	837		

STATISTICS OF TEHAMA COUNTY, 1909-10—Continued.

Fruits, Vegetables, Etc.

	Total Production. Pounds.	Value.
Green—		
Apples	242,040	\$3,630
Apricots	408,805	9,196
Asparagus	50,000	2,500
Blackberries	70,000	4,200
Beans, string	100,000	5,000
Beets	50,000	2,500
Cabbage	205,000	4,100
Celery	22,000	2,200
Cauliflower	35,000	2,450
Corn, sweet	400,000	6,000
Currants	6,000	600
Cherries	45,000	2,250
Assorted	1,215,000	32,000
Gooseberries	6,500	650
Grapes	15,060,000	301,000
Turnips	240,000	2,400
Melons	979,000	9,790
Lemons	15,000	750
Loganberries	10,000	500
Assorted vegetables	166,000	6,100
Onions	60,000	1,800
Oranges (boxes)	10,051	10,051
Olives, pickled	825,575	82,557
Pears	1,981,625	29,725
Peaches	3,948,254	59,223
Peas	85,000	5,100
Pumpkins	980,000	9,800
Plums	271,961	2,720
Irish potatoes	760,000	7,600
Sweet potatoes	240,000	2,400
Prunes	77,155	772
Peanuts	4,000	200
Raspberries	11,500	575
Strawberries	85,400	4,270
Tomatoes	1,400,000	25,000
Totals	30,046,871	\$632,409

	Pounds.	Value.
Dried—		
Almonds	299,092	\$67,286
Apples	3,000	300
Apricots	881,091	70,487
Beans	24,200	1,452
Figs	80,000	2,400
Onions	125,000	2,500
Pears	520,216	36,415
Peaches	4,955,655	247,783
Peanuts	4,000	200
Plums	26,898	807
Prunes	4,228,694	148,004
Raisins	12,504	1,250
Walnuts	27,488	2,749
Assorted	705,981	42,359
Totals	11,893,813	\$623,992

Live Stock Industry.

	Number.	Value.
Cattle—Beef	77	\$2,315
Stock	17,251	258,765
Dairy Cows—Graded.		
Thoroughbred	325	18,750
Common	1,463	36,585
Swine	5,111	25,555
Horses—American	2,348	139,015
Standard-bred	16	4,950
Common	1,745	56,830
Colts	860	31,370
Jacks and jennies	45	4,910
Mules	1,017	66,615
Sheep	222,272	555,680
Common goats	19,690	19,690
Thoroughbred bulls	34	1,700
Yearlings	80	1,725
Mule colts	339	11,050
Bucks	2,030	10,150
Total stock	274,703	\$1,245,655
Wool (pounds)	1,878,152	281,723
Mohair (pounds)	61,637	12,327

Number of Fruit Trees and Vines.

	Bearing.	Non-bearing.	Total.
Apple	18,650	3,750	22,400
Apricot	64,410	1,000	65,410
Cherry	5,070	245	5,315
Fig	18,125	2,535	15,660
Lemon	785	170	955
Olive	67,460	7,260	74,720
Orange	12,780	.....	12,780
Peach	679,400	203,750	883,150
Pear	63,050	3,750	66,800
Plum	6,000	.....	6,000
Prune	115,700	7,820	123,520

Total fruit ..	1,046,430	230,280	1,276,710
Almond	36,995	350	37,345
Walnut	3,000	.....	3,000

Total nut ...	39,995	350	40,345
Grapevines ...	2,775	.....	2,775
Berries, acres.	60	.....	60

Cereal Products and Hay.

	Tons of 2,000 pounds.		Value.
	Acres.	Tons.	
Wheat	37,630	3,970	\$119,100
Barley	43,860	7,438	163,636
Oats	4,975	817	24,510
Beans	110	13	1,560
Corn	250	200	5,000
Hops	175	170	34,000

Total cereals..	87,000	12,608	\$347,806
Alfalfa hay	5,850	10,288	\$92,612
Grain hay	33,290	9,584	95,840
Timothy hay	145	1,450

Total hay	39,140	20,017	\$189,902
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Wines, Brandies, Etc.

	Gallons.	Value.
Sweet wines	504,500	\$252,250
Brandy	135,000	135,000
Number of wineries, 1; number of distilleries, 1.		

Fish Industry.

	Pounds.	Value.
Salmon	258,266	\$15,496

Dairy Industry.

	Production.	Value.
Butter (pounds)	132,000	\$39,600
Gallons of milk	255,600	51,120
Gallons of cream	18,757	18,757
Number of creameries, 2.		

Poultry and Eggs.

	Dosen.	Value.
Chickens, ducks, geese and turkeys	785,262	\$179,408
Eggs	206,590	61,977
Total value		\$241,485

Forest Products.

	Amount.	Value.
Sawmills (number) ..	2	.....
Fuel, wood (cords)...	9,395	\$56,370
Lumber (feet)	8,500,000	85,000
Posts (pieces)	12,190	1,828
Sash and door factories (number)	1	65,000
Shakes (thousand) ...	507	5,070
Planing mills	1	.....

Total value	\$213,268
Power used for mills and manufacturing in county—Steam (number), 3; electrical (number), 8.	

STATISTICS OF TEHAMA COUNTY, 1909-10—Continued.

Miscellaneous Products.			Manufactories—Continued.		
	Pounds.	Value.		Dosen.	Value.
Bees (hives) num-ber 200	2,500	\$200	Flouring mills		80,000
Broomcorn seed	80,000	2,400	Foundries and iron works		12,000
Flowers and plants (acres)		10,000	Furniture and picture frames		10,500
Honey		500	Leather goods		7,500
Hops	340,000	34,000	Meat products—		
Syrup (gallons)	4,525	2,250	Hides (number)....	146,057	\$14,605
Mustard seed	19,540	977	Lard	40,300	4,030
Broom corn	40,000	2,000	Meat packed	72,000	9,000
Medicine		3,000	Tallow	19,290	950
Tamales		4,000	Olive oil (gallons)	6,500	13,000
Comp pins		4,000	Pickled olives (gallons)	102,500	102,500
Ice		15,000	Salts, mine		4,000
Rugs		4,000	Syrups and extracts...		2,250
Gas		8,000	Scouring mills		15,000
Ore	14,950				
Pits	199,689	2,000			
Alfalfa meal		54,000			
Manufactories.			Manufactured Output.		
	Amount.	Value.		Quantity.	
Brick		\$4,200	Brick (thousand)	600	
Cement blocks		12,000	Cigars	15,000	
Cigars		15,000	Hides (pounds)	146,057	
Confectionery		23,100	Lard (pounds)	40,300	
			Meat packed (pounds)	72,000	
			Tallow (pounds)	19,290	
			Olive oil (gallons)	6,500	

TRINITY COUNTY.

Trinity County is situated in the Coast Range of mountains and is drained by the Trinity, Mad, Eel, and Van Duzen rivers, and is well watered by the numerous creeks that carry streams of water from the mountain snows to the rivers and their tributaries. The higher mountain ranges being covered with snow during the winter season gives an ample supply for irrigation, and also provides an abundance of pasturage on the mountains. Trinity is bounded on the north by Siskiyou, on the east by Shasta and Tehama, on the south by Mendocino, and on the west by Humboldt County, thus being on the great mineral belt of the northwestern part of the State. Mining for gold has been the principal industry for fifty years. Hydraulic, placer, drift placer, dredge, and quartz mining have produced profitable results, and many hundreds of acres of auriferous gravel await exploitation, and also many quartz veins are as yet untouched. Many other valuable minerals have been found, but owing to the lack of cheap transportation facilities, none of them has been developed to any extent. With an abundance of sugar pine, yellow pine, and fir timber ready for the market the lumbering interests will be extensive as soon as railroad transportation is provided. Two proposed lines of railroad have been surveyed into the county with the object of reaching the timber belts, and also the immense deposits of copper ore known to exist. Indications have also been found of coal and oil. The state highway, now being constructed throughout the county, is attracting considerable attention to our different resources. The southern part of the county is particularly adapted for horticultural pursuits. Apples, pears, peaches, and grapes are now being grown there equal to any on the Pacific coast, and will develop into very profitable industries as soon as transportation facilities are provided. All kinds of fruits, berries, vegetables, grasses, hay, and grains, thrive and produce abundant crops.

Trinity can easily support four times the present population. With unlimited mineral wealth undeveloped, vast timber resources, good educational facilities in all parts of the county, with a high school at Weaverville, the county seat, and with wagon roads and telephone lines extending to nearly all parts of the county, Trinity is an inviting field for the prospector, tourist, investor, and homeseeker. Economic conditions are such that owing to the high prices of land in the more thickly settled portions of the State people must soon seek homes in our county where land is cheaper, and we have an ample supply of pure water, pure air, plenty of wood for fuel purposes, and a local market for many more products than we now raise. The climate of Trinity is temperate with a moderate snow fall on the higher mountains and sufficient rainfall in the lower portions to insure good crops and grazing. Many of the streams of Trinity have been stocked with different kinds of trout, and game is found in the different sections of the county. With many mineral and other springs, rugged and beautiful

scenery, and clear running streams of pure water, people from the heated valleys find Trinity an ideal camping place for a summer's outing.

STATISTICS OF TRINITY COUNTY, 1909-10.

General Statistics.

Area, 3,000 square miles, or 1,920,000 acres.	
Number of farms	327
Number of acres assessed	615,987
Value of country real estate	\$2,228,976
Of improvements thereon	\$246,341
Of city and town lots	\$27,690
Of improvements thereon	\$80,760
Of personal property	\$317,714
Total value of all property	\$2,884,258
Expended on roads, last fiscal year	\$14,440
Expended for bridges, last fiscal year	\$4,821
Number of miles of public roads	472
Number of miles of public trails	606
Road levy per \$100, 1910	40c
Value of county buildings	\$20,000
Irrigating ditches—miles, 215; cost	\$21,500
Mining ditches—miles, 489; cost	\$978,000
Electric power plants—3; assessed value	\$20,000
Electric power lines—miles, 32; assessed value	\$6,350
Number of acres irrigated	9,320
Gold mining claims, 1,800; assessed value	\$1,556,774
Quicksilver mining claims, 28; assessed value	\$12,150
Copper mining claims, 18; assessed value	\$1,175

Fruits, Vegetables, Etc.

	Total Production. Pounds.	Value.
Green—		
Apples	476,900	\$9,538
Apricots	2,000	60
Asparagus	1,500	60
Blackberries	32,000	1,500
Beans	20,000	1,100
Beets	50,000	1,250
Cabbage	115,000	2,350
Celery	1,500	60
Cauliflower	5,000	200
Corn	150,000	3,325
Currants .....	.....	75
Cherries	16,500	835
Figs	1,350	81
Gooseberries .....	.....	100
Grapes	107,000	2,140
Loganberries .....	.....	950
Nectarines .....	.....	75
Onions	86,700	1,734
Pears	75,000	1,550
Peaches	96,000	1,920
Peas	10,000	375
Plums	36,000	720
Irish potatoes	663,200	13,264
Sweet potatoes	2,700	81
Prunes	36,251	631
Quinces .....	.....	750
Raspberries .....	.....	2,500
Strawberries .....	.....	4,200
Tomatoes .....	.....	3,650
Total value		\$55,074
Dried—	Pounds.	Value.
Almonds .....	.....	\$150
Apples	8,000	640
Beans	43,750	875
Onions	30,000	750
Pears	3,500	210
Peaches	4,700	329
Plums	2,000	150
Prunes	1,600	80
Walnuts .....	.....	500
Total value		\$3,684

Cereal Products and Hay.

	Tons of 2,000 pounds.		Value.
	Acres.	Busbels.	
Wheat	2,200	33,000	\$41,250
Barley	120	3,400	4,250
Oats	200	3,000	3,000
Rye	50	1,000	1,000
Corn	400	8,000	12,000
Total cereals..	2,970	48,400	\$61,500
	Acres.	Tons.	Value.
Alfalfa hay	3,000	15,000	\$22,500
Grain hay	4,500	3,620	79,300
Grass hay	7,900	11,850	71,100
Total hay	15,400	32,470	\$172,900

Number of Fruit Trees and Vines.

	Bearing.	Non-bearing.	Total.
	Acres.	Tons.	Value.
Apple	5,200	1,600	.....
Apricot	78	33	.....
Cherry	572	110	.....
Fig	39	24	.....
Lemon	15	10	.....
Nectarine	27	.....	.....
Olive	5	35	.....
Orange	7	52	.....
Peach	1,260	110	.....
Pear	780	146	.....
Plum	1,130	365	.....
Prune	610	85	.....
Quince	230	22	.....
Total fruit..	9,953	2,592	12,545

	Value.
Almond	25
Chestnut	45
Pecan	5
Walnut	210
Other nuts ..	.....
Total nut ...	285

	Value.
Acres of grapevines	35
Blackberries	30
Raspberries	25
Strawberries	110
Loganberries	10
Gooseberries	5
Currants	5

Dairy Industry.

	Production.	Value.
Butter (pounds)	85,000	\$29,750

Live Stock Industry.

	Number.	Value.
Cattle—Beef	1,110	\$29,750
Stock	15,000	225,000
Dairy Cows—Graded..	500	30,000
Thoroughbred—		
Angus	50	5,000
Calves	3,000	15,000
Swine	3,500	35,000
Horses—Thoroughbred ..	5	1,250
Standard-bred	200	10,000
Common	1,900	95,000
Colts	250	2,500
Jacks and jennies	20	480
Mules	250	12,500
Sheep	3,900	11,700
Lambs	1,600	1,600
Angora goats	300	900
Common goats	653	1,306
Total value		\$556,086
Wool (pounds)	25,000	5,000
Mohair (pounds)	2,250	296

STATISTICS OF TRINITY COUNTY, 1909-10—Continued.

Wines, Brandies, Etc.			Forest Products.		
	Gallons.	Value.		Amount.	Value.
Beer (barrels)	132	\$792	Area of timber lands		
Cider	2,500	1,250	(acres)	1,106,880	\$11,068,800
Vinegar	6,000	1,550	Cedar (acres)	5,000	.....
Number of breweries, 1.			Pine (acres)	440,000	.....
			Redwood (acres) ...	701,180	.....
			Sawmills (number) ...	20	30,000
			Fuel, wood (cords)....	25,000	125,000
			Laths		96,000
			Lumber (feet)	5,000,000	.....
			Pickets (pieces)	6,000	220
			Posts (pieces)	1,600	160
			Shakes	82,000	820
			Mine lagging	76,000	1,960
			Mine timbers (feet)...	51,000	1,447
			Total value		\$1,362,487
			Power used for mills and manufactories		
			in county—Steam sawmills (number), 8;		
			water sawmills (number), 12; steam quartz		
			mills (number), 4; water quartz mills		
			(number), 22; electrical quartz mills (num-		
			ber), 4.		
Poultry and Eggs.					
	Dozen.	Value.			
Chickens	1,600	\$8,000			
Ducks	50	400			
Geese	15	150			
Turkeys	500	5,000			
Eggs	130,000	32,500			
Total value		\$46,050			
Miscellaneous Products.					
	Pounds.	Value.			
Bees (hives), number)	65	\$325			

VENTURA COUNTY.

Ventura County, one of the smallest of the group of seven southern counties, lies between Santa Barbara County on the north and west and Los Angeles County on the south and east, on the shores of the Santa Barbara Channel. The county is triangular in shape, one face of the triangle, full 50 miles, fronting the ocean.

Of its area of 1,852 square miles, less than one fourth is under cultivation. Back from the coast in all directions rise rugged mountain ranges, whose hearts are pierced in every direction with canyons and valleys of varying width. The entire northern section of the county is mountainous, but between the ranges here and there are to be found little valleys, whose soil is the most productive in the world.

The mountain watersheds supply innumerable streams which, flowing in different directions, form the two principal rivers of the county, from which is obtained a vast quantity of water for irrigation. These two rivers, the Santa Clara and the San Buenaventura, rise in these northern mountains, their sources being separated but a few miles. The Piru River, the Sespe, and the Santa Paula, each of considerable length from its winding through the mountain gorges and canyons, flow into and form the Santa Clara River, which enters the county on the south-eastern border, and flows in a generally western direction straight across to the sea. This is a stretch of nearly 40 miles, and the stream, with its feeders north and south, becomes the life blood, as it were, of a magnificent valley covering the southern portion of the county from east to west. Beginning on the east with a width of 2 or 3 miles, the valley gradually widens until its western breadth along the seashore is about 20 miles. The valley is broken by detached mountain ridges, whose living streams not only aid in producing the inexhaustible water supply and enhance the fertility of the soil, but afford the finest scenery and most desirable health resorts.

The San Buenaventura River rises in the mountains in the northern part of the county, flows south, and enters the Pacific within 6 miles of the mouth of the Santa Clara.

The lower part of the Santa Clara Valley is a vast plain, 20 miles or more in width, extending back from the ocean in a great crescent, whose greatest distance is 10 miles from the shore. This plain for countless ages has been receiving the alluvial deposits brought down by the streams from the hills and mountains. It is the garden spot of the county, one of the most fertile tracts of land in the world, producing annually hundreds of thousands of dollars' worth of produce. Every variety of plant life does well in this section, but so well adapted is the soil to beans and beets that these are the staples.

Other products of the county—products in which it ranks with the leading counties in the State—are apricots, walnuts, lemons, and oranges, the yield of each of which is enormous. Not alone does the

county boast the largest lima bean ranches, but also the most extensive walnut grove, and the largest single lemon ranch.

Its mountain slopes are covered with verdure, and in its mountain valleys are many apiaries. In a good year a vast amount of honey is produced, netting big returns to the apiarist.

The narrow stretch of coast from southern Santa Barbara County, through Ventura County and including the northern portion of Los Angeles County, is the greatest lima bean section in the world, and Ventura County is the greatest bean-producing section in the world.

The sugar beet thrives in this great valley, and the percentage of sugar is greater here than in any other section in the world. The culture of sugar beets supports the Oxnard sugar factory, the second largest in the world, with a capacity of 2,000 tons a day.

Many herds of cattle and sheep are to be found in the mountain sections, and stock raising is an important industry.

The county was the pioneer oil producer in this State, and its production of petroleum is still large.

The mountains are rich in mineral wealth; among its productions may be mentioned asphalt, clay, gold, natural gas, petroleum, rubble, sandstone and borax. The output of oil for the year was 375,000 barrels, worth \$225,000, and 12,000 tons of borax, worth \$1,200,000.

STATISTICS OF VENTURA COUNTY, 1909-10.

General Statistics.				Number of Fruit Trees and Vines.			
Area 1852.66 square miles, or 1,185,704.95 acres.				Bearing.	Non-bearing.	Total.	
Number of acres assessed.....	594,595			Apple	13,680	1,200	14,880
Value of country real estate.....	\$15,665,190			Apricot	82,000	4,200	86,200
Of improvements thereon.....	\$1,230,910			Cherry	4,800	600	5,400
Of city and town lots.....	\$1,762,265			Fig	2,500	500	3,000
Of improvements thereon.....	\$1,144,590			Lemon	180,000	60,500	240,500
Of personal property.....	\$2,991,716			Nectarine	1,600	250	1,850
Total value of all property....	\$22,794,671			Olive	32,060	3,000	35,060
Expended on roads, last fiscal year	\$82,195			Orange	240,000	11,500	251,500
Expended for bridges, last fiscal year	\$45,962			Peach	6,800	900	7,700
Number of miles of public roads	656			Pear	4,800	800	5,600
Road levy per \$100, 1910.....	35c			Plum	2,000	400	2,400
Value of county buildings.....	\$140,000			Prune	11,000	250	11,250
Irrigating ditches—miles, 59½; cost	\$344,900			Quince	1,000	100	1,100
Railroads, steam—miles, 108.32; assessed value	\$2,709,604			Other kinds..	7,000	7,000	14,000
Electric power plants—1; assessed value	\$10,000			Total fruit..	589,240	90,200	679,440
Electric power lines—miles, 50; assessed value	\$30,000			Almond	12,000	2,000	14,000
Number of acres irrigated.....	14,350			Walnut	140,000	6,280	146,280
Cereal Products and Hay.				Total nut...	156,000	8,280	164,280
	Acres.	Tons.	Value.	Grapevines ...	112,000	18,000	130,000
Wheat	2,060	1,130	\$33,900	Berries, acres.	200	.....	370
Barley	14,500	6,525	143,550	Live Stock Industry.			
Oats	1,600	380	9,360		Member.	Value.	
Corn	1,850	720	18,000	Cattle—Beef	15,000	\$600,000	
Total cereals..	20,010	8,755	\$204,810	Stock	8,500	173,500	
Alfalfa hay.....	1,500	1,500	\$16,500	Dairy cows—Graded..	1,200	36,000	
Grain hay	13,800	165,600		Calves	3,450	20,700	
Total hay			\$182,100	Swine	4,800	14,400	
Dairy Industry.				Horses—Common	7,800	936,000	
	Production.	Value.		Colts	1,200	30,000	
Butter (pounds).....	72,880	\$25,508		Jacks and jennies....	15	15,000	
Creameries, 2.				Mules	1,800	180,000	
				Sheep	28,700	142,500	
				Lambs	14,350	50,225	
				Common goats	400	900	
				Total stock		\$2,204,225	
				Wool (pounds)	143,500	21,525	

STATISTICS OF VENTURA COUNTY, 1909-10—Continued.

Fruits, Vegetables, Etc.

	Total Production. Pounds.	Value.
Green—		
Apples	188,000	\$1,880
Apricots	56,000	2,800
Asparagus	3,800	380
Blackberries	64,000	1,440
Beans	5,400	260
B ets	15,000	450
Cabbage	17,500	175
Celery	3,800	190
Cauliflower	6,000	300
Corn	56,000	2,800
Cherries	125,000	6,250
Figs	6,000	300
Grapes	145,000	8,700
Grape fruit	35,000	1,900
Lemons (boxes).....	225,120	1,003,040
Loganberries	12,000	240
Nectarines	4,500	225
Onions	3,000	150
Oranges (boxes).....	140,500	140,500
Olives	480,000	7,200
Pears	86,000	2,580
Peaches	92,000	2,760
Peas	7,500	375
Persimmons	4,000	240
Plums	9,500	475
Irish potatoes	840,000	16,800
Sweet potatoes	56,000	1,120
Prunes	5,400	216
Quinces	3,000	120
Raspberries	18,000	1,500
Strawberries	125,000	6,250
Tomatoes	80,000	800
Pomegranates	20,000	2,000
Rhubarb	20,000	200
Total		\$1,214,616
Dried—	Pounds.	Value.
Almonds	84,000	\$10,080
Apricots	5,180,000	530,950
Beans (small)	5,200,000	234,000
Onions	128,000	6,040
Peaches	1,000	100
Prunes	170,000	5,100
Walnuts	2,876,613	402,725
Lima beans	63,200,000	2,686,000
Total		\$3,874,995

Fish Industry.

	Pounds.	Value.
All kinds	1,625,000	\$48,750

Wines, Brandies, Etc.

	Gallons.	Value.
Dry wines	50,000	\$15,000
Number of wineries, 7.		

Poultry and Eggs.

	Dosen.	Value.
Chickens	5,400	\$28,000
Turkeys	180	4,320
Eggs	184,000	46,000
Total value		\$78,320

Forest Products.

Area of pine timber lands, 50,000 acres.
Sawmills, 1; value, \$6,000.
Fuel, wood, 6,500 cords; value, \$60,500.
Power used for mills and manufactories—Steam, 12; electrical, 18; water, 1.

Miscellaneous Products.

	Pounds.	Value.
Bees (hives)—Number	11,470	\$45,880
Flowers and plants		
(acres)	80	24,000
Honey	40,000	2,400
Garden seed	4,200	9,500
Sugar beets (tons)...	187,000	981,750

Manufactories.

	No.	Number of Employees.	Value of Products.
Bookbinderies	1	2	\$2,200
Brick	3	23	18,000
Confectionery	3	8	15,000
Foundries and iron works	2	38	70,000
Meat products—			
Hides			30,000
Lard			25,000
Meat packed			4,500
Tallow			800
Planing mills	4	30	35,000
Sugar, beet	1	650	2,000,000
Tiling	1	4	8,000

Manufactured Output.

	Quantity.
Brick (thousand).....	1,200,000
Hides (pounds)	320,000
Lard (pounds)	175,000
Meat packed (pounds).....	25,000
Tallow (barrels)	350

YOLO COUNTY.

Yolo County is situated in a delta of the Sacramento River where it changes from a southerly to a westerly course on its way to the Pacific. About 75 per cent of the county consists of level land, the balance being rolling hills and mountains. The principal pursuits of its inhabitants are farming, stock raising, and fruit growing.

In 1910 our barley crop alone exceeded \$1,000,000 in value, while other cereals and hay reached a like amount. Our barley is largely of an export variety, and is shipped extensively to European centers, where it finds a ready sale and eager purchasers, who require a first class cereal for brewing and other purposes. Our other cereals are disposed of generally in local markets.

Our green fruits are shipped to Eastern markets, where they command top prices. Growers and shippers of these fruits have found this avenue of disposal a very remunerative one.

Our dried fruits and nuts occupy an envied position in the list of our products. They are shipped and marketed all over the world. They are of a superior quality and flavor.

Our live stock interests are second to none. Here are found some of the world's greatest sires and dams, which are purchased here to head stock farms all over the Western states, Mexico, and Canada.

Our dairy products bring in a revenue of \$560,000 per annum. This money is distributed among dairymen semi-monthly, enabling them to do business upon a cash basis. This industry is becoming an important factor in our county, and indications point to an added increase to our output in the near future.

Our streams abound with fish of many kinds, which remunerate fishermen to the extent of \$325,000 per annum.

Hops to the value of \$140,000 are produced along our river bottoms. This industry is constantly growing in magnitude.

Eucalyptus trees have been planted upon 1,790 acres. These trees, of which 320 acres are two years old, show a marvelous growth and bid fair to add great value to our forest products. The former value of land where these trees are now planted has increased fivefold. This industry is in its infancy, but is receiving much attention, as an increased acreage will be planted in 1911.

The manufacture of farming machinery is becoming an item of added importance and necessity. It gives local purchasers an opportunity to purchase a manufactured product they desire at reasonable prices. These products are in great demand throughout the Western states. Their foreign sales, already of importance, are increasing yearly.

Boat building, to the extent of \$75,000 in 1910, speaks well for our increasing freight and river traffic.

Yolo County boasts one of the best equipped flour mills in the State. Its output is shipped extensively and gives general satisfaction.

Yolo wines have a world-wide reputation. This industry could be profitably increased.

The poultry production for 1910 reached \$355,600. This industry is growing yearly and is profitably followed by many.

Two hundred thousand dollars' worth of sugar beets were grown in our county in 1910. This industry is yet in its infancy, this being the third season only of its inception. When conditions are better understood by growers, this industry will become one of our principal productions.

Two railroads parallel our county north and south, while one crosses the southern part from east to west. An electric road is also in course of construction, which will also cross the southern part of the county and probably construct branch lines to other points.

We have a navigable water front of 90 miles along the Sacramento River, which affords at all seasons a cheap and ready means of transportation for the numerous products grown along its banks.

The reclamation of overflowed lands (which are very fertile) grow apace with our other developments. Many large tracts have either been reclaimed, or are in course of reclamation.

Irrigation is fast becoming a valued factor in our development. Every opportunity is offered for the development of water storage, which has been or is being taken advantage of at this time.

Our real estate is increasing in value at a rapid rate as Eastern and local purchasers continue to invest in small tracts, principally for homes. Real estate sales reached the sum of \$500,000 in the past year; this sum does not include the purchase of rights of way purchased by railroads.

Our cities and towns: Woodland, a city of 4,500 population, is situated in about the center of the valley of which three fourths of our county is composed. This is our county seat. This city boasts of an ideal government, has eleven churches, four schools, one high school, which is accredited by the State University, four banks, which are considered absolutely safe, and a chamber of commerce composed of some of our best business men who are advertising our county truthfully, and who are successfully interesting many homeseekers in our numerous opportunities for good investments. This is a city of homes. Our next city of importance is Winters, situated in the southwest part of the county. Winters has a population of 1,500, has six churches, two grammar schools, one high school, and several packing houses, and a cannery. This is the principal shipping point of our fruit product.

Broderick is situated in the southeast part of the county and has a population of 1,500. Many of its inhabitants are employed in Sacramento, which is just across the river. At this town are now being constructed two railway bridges at an estimated cost of \$1,250,000. One railway contemplates spending \$1,000,000 more in the near future upon levees, buildings, etc. This town has one large school, several churches, and here is also located our principal boat building yards, also the principal fisheries of the county. This town promises to become a great railroad center as well as a manufacturing point, located, as it is, accessible to many railroads, as well as water transportation.

Our other towns are Blacks, Dunnigan, Knights Landing, Madison, Esparto, Capay, Rumsey, and Davisville, which last is a railroad junction, and where a vast amount of freight and express is handled. Here at Davisville upon 685 acres of very fertile land is located the State Agricultural College, which is affiliated with the State University

and which is presided over by competent professors, who instruct in various branches of agriculture, dairying, etc. This college is becoming very popular and its courses are being taken advantage of by many local, as well as scholars from various parts of the State.

In conclusion, our lands, in so far as fertility is concerned, are second to none, our climate is ideal, our rainfall sufficient, there never having been a failure of crops. The inducements to homeseekers are all that could be desired. Absolutely everything which appeals to prospective purchaser can be found here, where a close inspection is courted and where the most incredulous may be satisfied.

STATISTICS OF YOLO COUNTY, 1909-10.

General Statistics.				Live Stock Industry.		
Area 1,017 square miles, or 650,880 acres.				Number.	Value.	
Number of farms	900			1,124	\$33,720	
Number of acres assessed	613,609			8,000	240,000	
Value of country real estate	\$12,150,840			Thoroughbred—		
Of improvements thereon	\$1,202,660			Ayrshire	18	1,440
Of city and town lots	\$868,620			Herefords	78	5,950
Of improvements thereon	\$1,485,260			Holsteins	225	22,500
Of personal property	\$2,483,210			Jersey	187	9,525
Total value of all property	\$18,140,550			Polled Angus	26	2,000
Expended on roads, last fiscal year	\$60,690			Shorthorns	250	25,000
Expended for bridges, last fiscal year	\$20,290			Calves	2,500	20,000
Number of miles of public roads	687			Swine	8,126	81,260
Road levy per \$100, 1910	40c			Horses—Thoroughbred	189	14,175
Value of county buildings	\$57,000			Standard-bred	327	49,050
Irrigating ditches—miles, 72; cost	\$2,198,365			Common	5,978	291,000
Number of acres irrigated	10,000			Colts	2,250	33,000
Telegraph and telephone lines	2			Jacks and Jennies	47	11,750
Assessed value	\$54,945			Mules	2,712	271,200
Cereal Products and Hay.				Sheep (common)	62,500	250,000
	Acres.	Bushels.	Value.	Lambs	12,004	36,012
Wheat	14,500	239,700	\$214,830	Angora goats	3,125	12,500
Barley	95,000	1,139,000	1,139,000	Sheep (thoroughbred)	467	9,340
Oats	1,200	42,666	24,000	Hogs (thoroughbred)	692	16,660
Rye	100	2,000	1,200	Total stock	110,765	\$1,416,082
Corn	500	15,000	10,000	Wool (pounds)	504,000	75,000
Total cereals	111,300	2,775,583	\$1,389,550	Mohair (pounds)	25,000	5,000
Tons of 2,000 pounds.				Note.—\$100,000 may be added to this estimate for value of thoroughbred sires and dams.		
	Acres.	Tons.	Value.		Dosen.	Value.
Alfalfa hay	12,000	41,000	\$500,000	Chickens	31,000	\$155,000
Grain hay	10,900	10,900	109,000	Ducks	1,500	7,500
Grass hay	2,000	2,000	6,000	Geese	120	1,080
Total hay	24,900	63,900	\$605,000	Turkeys	2,310	67,750
Wines, Brandies, Etc.				Eggs	565,000	124,300
Number of wineries	1			Total value		\$355,630
Number of distilleries	1			Forest Products.		
Number of breweries	1				Amount.	Value.
	Gallons.	Value.		Area of timber lands		
Sweet wines	156,973	\$62,790		(acres)	1,790	\$402,750
Beer (barrels) 3000	90,000	18,000		Fuel, wood (cords)	5,891	32,400
Brandy	20,500	22,000		Total value		\$435,150
Vinegar	35,000	3,500		Power used for mills and manufactories in county—Steam (number), 26; electrical (number), 11; Gasoline, 41.		
Fish Industry.				The valuation on timber land includes land and estimated value of trees at two years of age.		
	Pounds.	Value.		Miscellaneous Products.		
Salmon	1,600,000	\$160,000			Pounds.	Value.
Other kinds	2,800,000	65,700		Bees (hives)—No. 9150		
Totals	4,400,000	\$225,700		Beeswax	18,000	\$2,700
Dairy Industry.				Broomcorn	8,000	320
	Production.	Value.		Honey	550,000	27,500
Creameries	2			Hops	1,154,440	138,532
Butter (pounds)	1,511,590	\$517,720		Alfalfa seed	328,000	49,200
Cheese (pounds)	211,870	37,077		Clover seed (Bur.)	64,200	6,420
Ranch butter	27,000	6,750		Garden seed	20,000	4,000
				Sugar beets (tons)	40,000	200,000
				Mustard seed	89,000	8,900

STATISTICS OF YOLO COUNTY, 1909-10—Continued.

Fruits, Vegetables, Etc.

	Total Production. Pounds.	Value.
Green—		
Apples	30,000	\$600
Apricots	3,038,000	91,140
Asparagus	91,000	7,500
Blackberries	11,000	1,160
Beans	127,000	10,140
Beets	120,000	2,400
Cabbage	977,000	9,770
Celery	195,000	3,900
Cauliflower	245,000	7,000
Corn	250,000	5,000
Currants	3,000	500
Cherries	6,000	360
Figs	21,100	620
Gooseberries	3,100	160
Grapes	1,812,600	59,815
Grape fruit	6,000	300
Lemons (boxes)	75	300
Loganberries	95,000	9,000
Nectarines	8,000	400
Onions	40,000	1,000
Oranges (boxes)	2,900	5,800
Olives	9,000	750
Pears	1,489,280	89,356
Peaches	2,563,200	38,448
Peas	18,000	900
Persimmons	4,000	80
Plums	1,163,280	34,898
Irish potatoes	800,000	8,000
Sweet potatoes	27,000	710
Prunes	900,000	13,500
Quinces	8,000	400
Raspberries	5,000	500
Strawberries	45,000	4,600
Tomatoes	2,000,000	20,000
Persimmons	37,000	500
Wine grapes	18,000,000	76,500

Totals 34,148,160 \$605,636

	Pounds.	Value.
Dried—		
Almonds	1,475,500	\$184,437
Apricots	3,442,250	292,591
Beans	4,000,000	175,000
Figs	155,000	6,200
Figs, 2d estimate	2,600,000	78,000
Nectarines	3,100	175
Onions	1,670,000	25,050
Pears	95,000	5,700
Peaches	4,002,500	200,125
Prunes	1,727,500	86,375
Raisins	3,500,000	122,500
Walnuts	41,000	4,920
Cantaloupes	12,150	1,240
Melons	4,300	520
Pecans	1,100,000	11,000
Apricot pits	120,000	600
Peach pits		

Totals 23,931,850 \$1,206,033

	Cases.	Value.
Canned—		
Apples	15,157	\$37,892
Cherries	639	1,597
Peaches	31,487	78,717
Plums	796	1,990
Tomatoes	160	400

Totals 48,239 \$120,596

Number of Fruit Trees and Vines.

	Bearing.	Non-bearing.	Total.
Apple	850	100	900
Apricot	88,000	6,500	94,500
Cherry	4,000	4,000	8,000
Fig	5,300	500	5,800
Lemon	1,200	1,000	2,200
Nectarine	300	.....	300

Number of Fruit Trees and Vines—Continued.

	Bearing.	Non-bearing.	Total.
Olive	23,000	3,000	26,000
Orange	13,000	1,000	14,000
Peach	71,000	22,000	93,000
Pear	42,000	1,000	43,000
Plum	53,500	750	54,250
Prune	180,000	500	180,500
Quince	500	100	600
Other kinds	1,975	100	2,085

Total fruit.. 484,575 36,550 521,135

Almond	144,500	29,000	173,500
Pecan	540	.....	540
Walnut	8,200	1,800	10,000
Other nuts	50	.....	50

Total nut .. 153,290 30,800 184,090

Number of grapevines..... 2,450,000

Number of berries, all kinds.... 160,000

Almonds planted season 1910.... 21,000

Peaches planted season 1910.... 16,000

Note.—Estimate on cereals covers only those which were stored or shipped; 15 per cent may be added to this estimate.

The numbers of trees are taken from assessor's books, and do not include those planted in the year of 1910.

Manufactories.

	No.	Number of Employees.	Value of Products.
Bookbinderies	2	2	\$3,000
Carriages and wagons	9	18	37,500
Cigars	1	3	9,250
Clothing	12	17	45,000
Confectionery	4	8	53,000
Flour mills	1	15	173,000
Foundries and iron works	1	6	29,500
Furniture	4	9	13,225
Leather goods (harness)	6	11	30,175
Carriage trimming	2	3	3,900
Machinery (farm)	17	44	212,500
Sheep pelts .....	.....	.....	2,080
Mear Products—			
Hides (green) .....	.....	.....	8,000
Lard	6	10	23,000
Meat packed	5	7	6,000
Tallow	5	7	1,300
Olive oil	3	3	2,220
Pickles	2	2	2,000
Pickled olives	3	6	15,300
Planing mills	5	12	59,600
Artificial stone	3	15	60,000
Granite	2	2	3,000
Marble	2	2	3,000
Tin and galvanized iron	9	13	65,000
Tamales	4	6	11,050
Wood turning and carving	2	3	5,000
Miscellaneous	10	50	100,000
Boat building	2	17	75,000

Manufactured Output.

	Quantity.
Cigars (thousand)	185,000
Lime (barrels)	25,000
Hides (pounds, green)	80,000
Lard (pounds)	112,000
Meat packed (pounds)	60,000
Tallow (barrels)	100
Olive oil (gallons)	3,700
Sauerkraut (pounds), 12,000...	\$360

Dressed meats are shipped to the value of \$51,000.

STATISTICS OF YUBA COUNTY, 1909-10—Continued.

Number of Fruit Trees and Vines.

	Bearing.	Non-bearing.	Total.
Apple	7,250	850	8,100
Apricot	8,750	2,200	10,950
Cherry	11,125	4,450	15,575
Fig	4,495	2,500	6,995
Lemon	4,000	1,950	5,950
Nectarine	400	185	585
Olive	9,000	1,550	10,550
Orange	36,550	28,270	64,820
Peach	69,555	24,000	93,555
Pear	14,450	23,550	38,000
Plum	555	300	950
Prune	5,055	3,100	8,155
Quince	200	125	325
Total fruit..	171,480	93,030	264,570
Almond	7,500	1,500	9,000
Walnut	2,500	750	3,250
Total nut ...	10,000	2,250	12,250
Grapevines (all kinds)...	25,000	.....	25,000
Berries, acres, all kinds ...	325	.....	325

Fruits, Vegetables, Etc.

	Total Production. Pounds.	Value.
Green—		
Apples	58,000	\$920
Apricots	21,000	420
Celery	4,500	125
Cauliflower	6,200	225
Grapes	8,200,000	40,125
Lemons (boxes)	90	270
Oranges (boxes)	750	1,500
Pears	2,000,000	40,000
Peaches	2,600,000	22,500
Peas	7,000	200
Plums	860,000	9,050
Quinces	25,000	225
Strawberries	2,400	280
Tomatoes	52,000	650
Cucumbers	65,000	6,050
Totals	13,901,940	\$122,540
Dried—	Pounds.	Value.
Almonds	61,000	\$6,100
Apples	1,500	95
Apricots	20,000	2,100
Currants	11,000	1,045
Figs	11,000	2,500
Pears	119,000	8,540
Peaches	300,000	12,000
Plums	850	340
Prunes	150,000	4,000
Raisins	135,000	5,800
Totals	898,350	\$42,520
Canned—	Cases.	Value.
Peaches	67,000	\$234,500
Plums	10,000	25,000
Totals	77,000	\$259,500

Wines, Brandies, Etc.

Number of breweries, 1.	Gallons.	Value.
Beer (barrels)	2,250	\$11,250

Dairy Industry.

	Production.	Value.
Butter (pounds)	219,000	\$525,600

Live Stock Industry.

	Number.	Value.
Cattle—Beef	4,100	\$141,000
Stock	500	90,000
Calves	3,000	30,000
Swine	7,500	75,000
Horses—Thoroughbred	35	7,000
Standard-bred	23	6,500
Common	4,500	337,500
Colts	800	28,000
Jacks and jennies....	25	1,000
Mules .....	.....	62,500
Sheep	55,000	165,000
Common goats	650	1,625
Totals	76,133	\$945,125
Wool (pounds)	400,000	\$73,000

Poultry and Eggs.

	Dozens.	Value.
Chickens	9,000	\$54,000
Turkeys	5,000	10,000
Eggs	180,000	53,000
Totals	194,000	\$117,000

Miscellaneous Products.

	Pounds.	Value.
Bees (hives), number. ....	.....	\$845
Hops	1,800,000	370,000

Manufactures.

	No. Employees.	Value of Products.
Brick	1	\$18,000
Carriages and wagons	3	8
Cigars	2	10
Confectionery	2	8
Flouring mills	1	25
Foundries and iron works	3	150
Leather goods	4	25
Malt	1	6
Meat products—		
Hides	2	11,200
Lard	1	10,000
Meat packed .....	.....	250,000
Tallow .....	.....	3,780
Planing mills	2	35
Marble	2	5
Tin and galvanized iron	4	30
Wool scouring	1	20
Awnings and tents..	1	.....
Soda works	2	10
Ice plants	1	15

Manufactured Output.

	Quantity.
Brick (thousand)	120
Cigars (thousand)	50
Flour (barrels)	67,200
Malt (tons)	60
Hides (pounds)	140,000
Lard (pounds)	102,000
Meat packed (pounds)....	1,565,000
Tallow (barrels)	300

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